This is a digital copy of a book that was preserved for generations on library shelves before it was carefully scanned by Google as part of a project to make the world's books discoverable online.

It has survived long enough for the copyright to expire and the book to enter the public domain. A public domain book is one that was never subject to copyright or whose legal copyright term has expired. Whether a book is in the public domain may vary country to country. Public domain books are our gateways to the past, representing a wealth of history, culture and knowledge that's often difficult to discover.

Marks, notations and other marginalia present in the original volume will appear in this file - a reminder of this book's long journey from the publisher to a library and finally to you.

Usage guidelines

Google is proud to partner with libraries to digitize public domain materials and make them widely accessible. Public domain books belong to the public and we are merely their custodians. Nevertheless, this work is expensive, so in order to keep providing this resource, we have taken steps to prevent abuse by commercial parties, including placing technical restrictions on automated querying.

We also ask that you:

+ *Make non-commercial use of the files* We designed Google Book Search for use by individuals, and we request that you use these files for personal, non-commercial purposes.

+ *Refrain from automated querying* Do not send automated queries of any sort to Google's system: If you are conducting research on machine translation, optical character recognition or other areas where access to a large amount of text is helpful, please contact us. We encourage the use of public domain materials for these purposes and may be able to help.

+ *Maintain attribution* The Google "watermark" you see on each file is essential for informing people about this project and helping them find additional materials through Google Book Search. Please do not remove it.

+ *Keep it legal* Whatever your use, remember that you are responsible for ensuring that what you are doing is legal. Do not assume that just because we believe a book is in the public domain for users in the United States, that the work is also in the public domain for users in other countries. Whether a book is still in copyright varies from country to country, and we can't offer guidance on whether any specific use of any specific book is allowed. Please do not assume that a book's appearance in Google Book Search means it can be used in any manner anywhere in the world. Copyright infringement liability can be quite severe.

About Google Book Search

Google's mission is to organize the world's information and to make it universally accessible and useful. Google Book Search helps readers discover the world's books while helping authors and publishers reach new audiences. You can search through the full text of this book on the web at `http://books.google.com/`

600010597S

26.163

r. 5.4. 1827.

THE

LITTLE WORLD OF KNOWLEDGE,

ARRANGED NUMERICALLY.

DESIGNED FOR EXERCISING THE MEMORY,

AND AS

AN INTRODUCTION

TO THE ARTS AND SCIENCES,

HISTORY, NATURAL PHILOSOPHY, BELLES LETTRES,

&c. &c. &c.

By CHARLOTTE MATILDA HUNT.

> "I lisp'd in numbers, for the numbers came."
> POPE.
>
> "——— If a better system's thine,
> Impart it frankly, or make use of mine."
> FRANCIS.

LONDON:
PRINTED FOR
LONGMAN, REES, ORME, BROWN, AND GREEN,
PATERNOSTER-ROW.
1826.

163

BIBLIOTHECA·BODLEIANA

LONDON:
Printed by A. & R. Spottiswoode,
New-Street-Square.

TO

HER ROYAL HIGHNESS

THE PRINCESS AUGUSTA.

MADAME,

IF I durst have coveted one honour more precious than another for this small volume, humbly but sincerely intended to improve the mind of youth, it would have been the permission to inscribe it with the name of Your Royal Highness. But to have the gracious commands of a Princess, so distinguished for every female grace and virtue, to dedicate my unpretending work to her, and to offer it to the public thus sanctioned by her approbation, is a reward as far beyond my utmost hopes as above its lowly merits.

With feelings, therefore, of gratitude not to be expressed, I lay my Little World of Knowledge at Your Royal Highness's feet; and beg to subscribe myself

Your Royal Highness's

Most faithful, devoted,

and obliged Servant,

CHARLOTTE MATILDA HUNT.

St. James's Palace, June 29. 1826.

PREFACE.

In publishing the following sheets, the Writer has reluctantly yielded to the solicitation of friends, who, having seen their application in her family, were desirous of obtaining copies.—The Work was originally compiled for the use of her own children, and not intended to meet the eye of criticism: she, therefore, lays claim to no higher merit than that of industriously selecting, and carefully pruning the several articles, to fit them for the juvenile eye and understanding.

In arranging the subjects under numerical heads, with the view of impressing them more distinctly on the young memory, it will be seen that the Author has frequently been decided rather by her own discretion than by any precise and fixed number according to which they might have been classed.

June, 1826.

ERRATA.

Page 72. line 7. for "Prepositions" read "Propositions."
143. line 17. for "two diameters" read two "diameters and a quarter."
173. line 6. for "*abestine*" read "*asbestine.*"
179. line 31. (in a few copies) for "accurate" read "actuated."
339. line 10. read "from his shoulders."

Note. Read "Les Quatres," "Les Cinqs," &c. Porny's Grammar authorises the addition of an *s* to adjectives of number, when they are used as substantives. *Ex.* Otez deux cinquièmes.

INDEX.

Page

AGRICULTURE. Cultivated with great assiduity by the Chaldeans 218
- The Carthaginians applied themselves to the study. — Great attention paid to it by the Greeks and Romans 219
- Cato wrote a treatise 220

ANCIENT HISTORY. Punic wars. First 49
- Second 52
- Third 59
- Kings of Assyria 101
- Universal Monarchies 104
- Divisions of Jerusalem 105
- Labyrinths 110
- Rivers in Eden 111
- Wonders of the World 187
- Disputed birth-place of Homer 191
- Ancient and wonderful cities 202
- Gates of Jerusalem 293

ANIMALCULES, Sections of 81

ARITHMETIC, Principal rules of. — Brought into Europe. — Arabic figures unknown to the Greeks and Romans .. 151

ARMOUR. Chain and mail-plate 42
- Shield, helmet, and breast-plate. — Defensive armour of the Israelites 43
- Egyptian armour 44
- Application of armour to horses 45

ARTS AND SCIENCES. Tapestry 34
- Enamelling 46
- Dyeing 283

ASTROLOGY, Branches of 40
- Dodecatemories, or Astrological Houses 322

ASTRONOMY. Motions of the Earth. — Tropics 8
- Eclipses 27
- Pillars of Seth 38
- Solstices 42
- Pleiades 192
- Primary Planets 292
- Signs of the Zodiac 318

ASYLUMS. Greenwich 10
- Chelsea 12

ATHENS. Called *the City*. — When founded. — Literature and the Arts in the age of Pericles 206

Page

AUGURIES. Five sorts described. — Story of Claudius the Consul ... 162
  Cæsar's exclamation upon falling on his face ... 163
BABYLON. When founded. — Compass of the City and thickness of the Walls. — Gates. — Streets and Squares ... 203
  Temple of Belus. — Hanging Gardens, &c. ... 204
BALBEC. Its situation, &c. ... 205
BELLES LETTRES, or Liberal Arts ... 185
BIOGRAPHY. Shakspeare ... 1
  Milton ... 3
  Newton ... 4
  King Edward VI. ... 95
  Queen Mary. — Queen Elizabeth ... 96
  The Venerable Bede ... 256
  Thomas à Becket ... 258
  Friar Bacon ... 264
  John Wicliff ... 266
  Cardinal Beaufort ... 268
  Bishop Latimer ... 269
  Cardinal Wolsey ... 273
  Archbishop Cranmer ... 277
  Archbishop Laud ... 280
  Sir James Thornhill. — Hogarth ... 326
  Wilson. — Sir Joshua Reynolds.—Gainsborough.—Wright 327
  Romney. — Mortimer ... 328
  Opie. — West. — Morland. — Leonardo da Vinci ... 329
  Michael Angelo. — Titian. — Raphael. — Del Piombo ... 330
  Correggio. — Parmigiano.—Paul Veronese.—Annibal Caracci ... 331
  Claude Lorrain. — Rembrandt. — Salvator Rosa ... 332
  Julius Cæsar ... 333
  Augustus Caius Octavius ... 339
  Tiberius. — Caligula, (Caius Cæsar) ... *ib.*
  Claudius. — Nero ... 340
  Galba, (Servius Sulpicius) ... 342
  Otho, (M. Salvius) ... 343
  Vitellius, (Aulus) ... 344
  Vespasian, (Titus Flavius Vespasianus) ... 345
  Titus, (Vespasianus) ... 346
  Domitian, (Titus Flavius Domitianus) ... 347
BOOKS, Size of ... 102
  Domesday Book ... 26
  Koran ... 193
  Talmud ... 23
  Canonical Books ... 47
  Books of the Bible ... 151
BOTANY. English Trees ... 32
  Parts of a Flower ... 190
  Colours of Plants ... 241
  Parts of Plants ... 295
  Stalks of Plants ... 298

Page

BUILDING, Origin of. — American Log-houses 235
  Wig-wams and *Kraals*. Earliest Stone Structures.—Manufacture of Bricks.—First Buildings of the Greeks.—Early English Huts or Cottages. — *Cabdab*........ 236
  Number of Houses in ancient Rome. — Regulations for Buildings in London.—Villa of the Romans.—Quinta, Cassine.— Summer-houses, &c.... 237
CHARACTERS, Written 21
  Liquid Letters 102
  Numerical Letters.... 191
  Dominical Letters.... 194
CHEMISTRY Gases...... 19
  Oils 32
  Alkalies. — Gunpowder 88
  Branches of Chemistry 214
  History of Chemistry........ 215
  Simple Substances........ 310
  Acids 312
CHRONOLOGY, Divisions of. 47
  Olympiad 103
  Lustrum........ 151
  Epochs 166
  Indictions 83
COACHES. First used in England........ 210
  Hackney Coaches, Sedan Chairs 211
COINING. Performed by the Hammer........ 33
  —— by the Mill—Money struck at the Public Expense.... 34
COLOURS { Of Mourning........ 168
  In Heraldry 191
  Used in Dyeing... 238
  Prismatic Colours 196
COMMERCE. Mentioned in the Book of Genesis—its Establishment among the Egyptians and Phœnicians........ 220
  Carthaginians and Gauls........ 221
  Greeks and Romans 222
  Discovery of America by Columbus 227
CONCHOLOGY Classes of Shells........ 66
COSMOGRAPHY. Tides........ 18
  Tropical Winds 65
  Seasons 139
  Winds........ 140
  Whirlwinds........ 113
  Water Spouts.. 164
  Echoes.. 183
  Modifications of Clouds 195
COSTUME. Robes of the Roman Senators.—Laticlavium and Augusticlavium........ 17
  Robe of the High-Priest of the Jews 231
CRUSADES. Account of the first........ 237
  —— second, third 239
  —— fourth, fifth, sixth, seventh, eighth, ninth........ 240

Page
CRYSTALLOGRAPHY. Primitive forms of Crystals 167
DANCING, Ancient styles of 93
David danced before the Ark.—Socrates learned late in life to dance.—Cato practised it at Sixty 94
DREAMS. Deducible from three Causes.—Aristotle's opinion 82
Mr. Locke's opinion. 83
ECCLESIASTICAL HISTORY. Prester, John 24
Notaries 194
Religious Houses, and Dissolution of them 302
ELECTRICITY, Powers of 27
EMBER WEEKS. Appointed for the Ordination of Priests and Deacons 105
ENGLISH HISTORY. Orders of Thanes 23
Kings of the Line of Lancaster—of the Line of York—Kings who reigned upwards of fifty Years 63
Children of king Henry VIII... 95
Sons of Ethelwolf 103
Norman Kings 104
Orators 118
Conquests 151
Degrees of Nobility... 156
Battle of Hastings..... 160
Dynasties 170
Wives of Henry VIII 174
Saxon Heptarchy 186
Kings who died by violent means 208
Battle of Bannockburn.—Crecy... 244
Poictiers... 246
Agincourt 247
Bosworth.—Flodden Field 250
Worcester 252
Boyne.—Culloden 254
Gunpowder Plot 304
ENTOMOLOGY. Metamorphoses of Insects 67
Silk-worm 115
Orders of Insects 189
FABULOUS HISTORY Scylla and Charybdis 12
Augeas's Stable 325
FINE ARTS. Painting 74
—— on Enamel... 77
Sculpture...... 78
Architecture 79
Engraving 80
Five Orders of Architecture 141
Monumental Columns 147
Cartoons..... 191
English Painters 326
Old Masters 329
FOSSILS, Classes of 10
FOUNDRY. Casting of Statues 229
Guns 230

Page

FOUNDRY. Casting of Bells ... 231
GEOGRAPHY, Divisions of ... 35
First Maps ... 36
Extremities of the Holy Land ... 45
Europe ... 127
Asia ... 130
Africa ... 134
America ... 136
Great Oceans ... 151
Glaciers of Savoy ... 153
Zones ... 156
Cinque Ports ... 159
Hills of Rome ... 186
Seas which encompass Europe ... 189
Principal Mountains ... 209
GEOLOGY. Classes of Stones ... 86
Earths ... 285
GEOMETRY, Divisions of — Egyptians the first Inventors carried into Greece by Thales. — Inscription on the Door of Plato's Academy ... 120
Writings of Archimedes and Apollonius — Works of Des Cartes, and Sir Isaac Newton ... 121
GLASS, Properties of ... 211
History of ... 213
GRAMMAR. Numbers. — Prepositions. — Conjunctions ... 17
Articles — Participles. — Syntax. — Composition ... 18
Degrees of Comparison ... 70
Genders. Cases of Nouns. — Verbs ... 72
Chief properties of a Verb Sorts of Nouns ... 107
Vowels. — Adjectives. — Moods in Verbs ... 153
Pronouns ... 165
Tenses. — Parts of Grammar ... 169
Prosody. — Stops. — Marks for Accentuation ... 170
Auxiliary Verbs ... 194
Parts of Speech ... 241
Adverbs. — Interjections. — Points or Marks ... 299
GRECIAN HISTORY. The Ephori ... 152
Sages of Greece ... 185
GYMNASTIC Exercises ... 149
HERALDRY. Heralds ... 63
Tinctures in Heraldry ... 191
Additions of Honour. — Distinctions of Houses. — Points of the Shield ... 242
Heads under which Arms are distinguished ... 299
HISTORY, Guides to. — Sorts of History ... 8
ICHTHYOLOGY Distinctions of the Fish kind ... 66
JURISPRUDENCE. English Laws ... 121
Jury ... 316
Laws of the Twelve Tables ... 317
LANGUAGES. Derived from the Celtic ... 72
Derived from the Latin — from the Sclavonian. — Original Languages ... 107

Page
LANGUAGES. Derived from the Gothic 208
Divisions of Languages 103
LEARNED AGES. Their Periods 102
LEARNED SOCIETIES. Oxford 8
Cambridge 9
LOGIC. Sorts of Argument 170
Syllogisms — Propositions in a Syllogism 72
LONGEVITY, Remarkable instances of 194
MACHINERY. Steam Engine. — Inventors, &c 229
MAGNET, Properties of the 161
MANNERS AND CUSTOMS. Turkish Divans 28
Mourning 168
MANUFACTURES. Stockings. — Shoes 31
Paper 173
Steel 227
Wool. — Silk (see Silk-worm) 287
Cotton 288
MARQUETRY. Materials used in Marquetry 89
The Art brought by the Romans from Asia — improved by John of Verona 90
MEDALS. Parts of Medals — most ancient yet discovered 9
METALLURGY. Classes of Metals 107
METEOROLOGY. Instruments used in. — Barometers, Thermometers, &c. 216
MINERALOGY, Doctrines of 150
MINING. Tin. — Lead. — Copper 232
Coals 233
MONEY, Origin of 288
Iron and Tin Rings used by the ancient Britons 289
Silver the first Metal used in Grecian coinage 290
Edward I. established the standard for Gold Coin 291
Farthings of Gold 292
MUMMIES. Prepared without embalming. — Another kind found in the Catacombs near Cairo 15
Preparation of Mummies known and in use before the time of Moses 16
MUSIC. Musical Instruments used in Warfare 113
Notes in Music. — Origin of Music 199
Music part of the Study of the Pythagoreans 200
Curious Anecdotes of the effect of Music 202
MYTHOLOGY. Mountains. — Rivers 9
Chief Egyptian Deities 27
Graces. — Fates. — Furies. — Gorgons 70
Divinities 147
Muses. — Inferior Goddesses 241
Principal Gods 292
Principal Goddesses 293
Classes of Heathen Gods 323
Labours of Hercules 325
NATURAL HISTORY. Quadrupeds covered with Scales. 9
Kingdoms of Nature 66
Carnivorous Animals *ib.*

Page

- NATURAL HISTORY. Ruminating Animals ... 106
  - Reptiles ... 112
  - Amphibious Quadrupeds ... 150
  - Varieties of the Human race ... 164
- NATURAL PHENOMENA. Volcanoes ... 103
- NAVIGATION. The Phœnicians the first Navigators ... 224
  - Revival of Navigation ... 225
  - Discovery of America, by Columbus ... 227
- NINEVEH. Its situation, &c. ... 202
- ORDEALS. By hot Water—by cold Water ... 73
- ORNITHOLOGY. Classes of Birds ... 165
- PALMYRA. Its Situation, and splendid Buildings ... 205
- PERSEPOLIS. Famed for its natural Fortification ... 205
- PHARMACY, Parts of ... 10
- POETS AND POETRY. Principal Poems of Homer ... 9
  - Troubadours ... 30
  - Greatest Poets ... 68
  - Sorts of Verse ... 107
  - Seven Ages of Man ... 192
  - Feet in Poetry ... 208
  - Sorts of Poetry ... 299
- POLITICS. Guelphs and Gibellins. — Whigs and Tories ... 29
- PORCELAIN. Substances used in the Manufactures of ... 118
  - Pottery ... 119
- REGALIA. Prerogatives of a King ... 171
- RELIGION. Covenants ... 7
  - Sacraments. — Parts of Religion ... 8
  - Books of Homilies. — Parts of the Talmud ... 23
  - Canonical Books. — Creeds, or Beliefs. — Lutheran Church. 47
  - Books of the Bible ... 151
  - Calvinists ... 158
  - Articles of the Reformed Church ... 169
  - Koran ... 193
  - Catholic Epistles ... 202
  - Commandments ... 282
- RELIGIOUS ORDERS. Jesuits ... 152
  - Druids ... 153
  - Priests of the Pontifical College at Rome.— Orders of Clergy in England ... 209
- RHETORIC. Rhetorical divisions of a Discourse ... 170
- ROME. Its Origin, &c. ... 206
- SACRED HISTORY. Deluge ... 6
  - Jewish Captivities ... 45
  - Sons of Noah ... 67
  - Kings of Israel ... 95
  - Evangelists ... 100
  - Sons of Shem ... 164
  - Churches mentioned in the Book of Revelation ... 185
  - Sons of Saul ... 192
  - Periods of the History of the Old Testament ... 195
- SACRED HISTORY. Sons of Japheth ... 207
  - Orders of Angels ... 242

Page
SACRED HISTORY. Tribes of Israel ... 314
The Shew-bread. — Apostles. — Epiphany ... 315
Judges of Israel ... 316
Plagues of Egypt ... 282
SCULPTURE. Sizes of Statues. (See Fine Arts) ... 113
SEALS. The use of Seals mentioned in the Book of Daniel ... 41
First sealed charter in England ... 42
SHIPS. Rates of. — Invention. — Ships built under the direction of Archimedes ... 172
SIBYLS. ... 72
Sybylline Oracles ... 73
SIGNALS. Various methods of making them.— Mentioned by Homer, and by Æschylus ... 72
SLAVES. Roman form of Manumission of Slaves ... 90
Slaves made by Nimrod. — Roman Slaves. — Grecian Prodigals — German Enthusiasts ... 91
SPORTS AND PASTIMES. Hunting ... 349
Hawking ... 351
Coursing. — Cock-fighting ... 352
Horse-racing ... 353
Archery ... 354
Slinging of Stones. — Wrestling. — Boat-rowing ... 356
Skating ... 357
Bowling. — Games with the Ball ... 358
STIGMATISING. Ancient ways of ... 85
Soldiers branded in the Hand with the name of their General 86
SWORDS. Parts of a Sword. — Sword of Charlemagne ... 84
Ancient and modern names of Swords ... 85
TIME. Inventions for measuring Time. — Sun-dial ... 176
Clepsydra ... 177
Hour-glass. — Clock. — Watch ... 178
Chronometer ... 179
Days of the Week ... 198
Ides ... 208
Months of the Year ... 320
TITHES. The custom of paying Tithes very ancient ... 281
First legally enjoined by Moses ... 282
TOURNAMENTS. First Tournaments. — Held every three years in Germany — Practised in England as early as King Stephen ... 243
TRIPODS, Three kinds of—their uses ... 84
TROUBADOURS. Their numbers.—Royal Troubadours, &c. 30
TYPOGRAPHIA. Kinds of Printing ... 25
Invention disputed ... 26
VENTRILOQUOUS. Famous Ventriloquists. — Traces of the Art or Faculty found in the Ancient Writings ... 115
VOYAGES. Captain Cook's first Voyage round the World ... 64
— Second, third ... 65
ZOOLOGY. Classes of animals ... 166

THE
LITTLE WORLD
OF
KNOWLEDGE.

ONE SHAKSPEARE.

"Shakspeare is justly esteemed the most eminent and most interesting author of the ancient or modern world. Many critics and commentators, both English and foreign, have employed their pens and exerted their faculties in dissertations on the merits and defects of his productions. From the most trying and fastidious ordeal of investigation he has risen in glory and greatness, and may with truth be pronounced pre-eminent and unrivalled as a dramatic poet.

"Among the literary 'worthies' of the world, from the days of Homer to Milton, no one has attained equal celebrity with Shakspeare. He shines as the sun of the intellectual hemisphere, and every other poet seems to derive a reflected light from him. Like divine Nature, which was at once his guide and goddess, his writings excite admiration and delight the more intensely they are studied. Prompted by inspiration, and impressed with profound knowledge, with the keen and acute 'poet's eye' he commanded every region of the terrestrial globe, penetrated the hidden thoughts of man, and gave to 'airy nothing a local habitation and a name,' and assigned to every passion and sentiment 'its true form and feature.'

"Heaven has him now; let our idolatrous fancy, therefore, sanctify his reliques. Despairing to be his equals, let us profit by his precepts; seek to acquire his wisdom, and emulate his gentleness, talents, and honours."

A singular and unaccountable mystery is attached to Shakspeare's life; and, by some strange fatality, almost every document concerning him has been destroyed, or still remains in obscurity. The first published memoir of him was drawn up by Nicholas Rowe, 1709, nearly a hundred years after the poet's death, and the materials for this were furnished by Betterton, a player. It is ascertained that he was born at Stratford-upon-Avon, in Warwickshire, April 23d, 1564. According to the account of John Aubrey, his father was a butcher, and Shakspeare himself, when he was a boy, exercised his father's trade. Being naturally inclined to poetry and acting, at 20 years of age he came to London, and was an actor at one of the play-houses.

He is said to have written thirty-five plays, and many other poetical pieces: the first of his poems was dedicated, as "the first heir of my invention," to Henry Wriothesley, Earl of Southampton, who presented the poet with a thousand pounds.

Queen Elizabeth, who encouraged all sorts of silly shows, May-games, and buffooneries, was not insensible to Shakspeare's talents, for she commanded several of his plays to be acted before her, and having been much delighted with the character of Falstaff, as delineated in the First Part of Henry IV., recommended the bard to pourtray the fat knight in love. Hence originated the Merry Wives of Windsor. James I. also attended representations of many of our author's plays, and wrote the poet "an amicable letter" with his own hand.

At the age of 18, Shakspeare married Ann Hathaway. He died, leaving two daughters (his son having died in 1596), on the anniversary of his birth-day, April 23d, 1616, and was buried, on the second day after his death, in the chancel of Stratford church.

On a flat stone covering the grave is this curious inscription:—

Good frend, for Jesus' sake forbeare
To digg the dust encloased heare;
Blest be ye man yt spares these stones,
And curst be he yt moves my bones.

ONE MILTON.

THE most illustrious of English poets was John Milton. This prodigy of genius was born in Bread Street, Cheapside, London, on the 9th of December, 1608. At the age of fifteen he was sent to St. Paul's School, and began to distinguish himself by his intense application to study, and his poetical talents. Ardent in his love of knowledge, he was regardless of pleasure, and even of health, when they came into competition with the prevailing passion of his soul. From St. Paul's he went to Cambridge; but of his studies in the university little more is known than that he gave proof of extraordinary skill in writing Latin verse.

He took the degrees of bachelor and master of arts; the latter in 1682, when he left the university. In the seven years of his academical life, his vigorous and ardent genius broke out in frequent flashes, and evidently disclosed the future author of "Comus" and "Paradise Lost."

Milton was appointed Latin secretary to Cromwell, which office he held till the death of the protector.

In 1667, he published, in ten books, the first edition of his immortal poem "Paradise Lost," and he received from Samuel Simmons, the bookseller, five pounds for the copyright, with a contingency of ten more, depending on the sale of two other editions, and which he lived to receive.

In 1671, Milton published his "Paradise Regained," a poem in every way inferior to the former; and at the same time appeared his "Sampson Agonistes," composed upon the ancient model, and never intended for the stage.

He died on the 8th of November 1674, in his 66th year, and was buried in the church of St. Giles, Cripplegate.

"Milton," says Dr. Symmons, "was a man in whom were illustriously combined all the qualities that could adorn or elevate the nature to which he belonged; a man who possessed at once beauty of countenance, symmetry of form, elegance of manners, benevolence of temper, magnanimity and loftiness of soul, the brightest illumination of intellect, knowledge the most various and extended, virtue that never loitered in her career nor deviated from her course; a man who, if he had been delegated as a representative of his species to one of the superior worlds, would have suggested a grand idea of the human race, as of beings affluent with moral and intellectual treasure, who were raised and distinguished in the universe as the favourites and heirs of heaven."

ONE NEWTON.

Sir Isaac Newton, the most illustrious of philosophers and mathematicians, and who, on account of his well-earned celebrity, has been denominated the "Prince of Philosophers," was born on Christmas-day, 1642, at Woolsthorpe, in Lincolnshire. At the grammar-school at Grantham he laid the foundation of classical learning, and gave decisive marks of his natural genius. In the year 1660 he entered himself of Trinity College, Cambridge, and began his studies with the "Elements of Euclid;" but these did not detain him long. In 1664 he took the degree of bachelor of arts, and about this period turned his thoughts to the improvement of telescopes.

In 1665, the breaking out of the plague obliged him suddenly to quit his studies and his books, and retire into the country. From this time for about two years he lived in a great degree secluded from society; but the activity of his genius would not permit him to spend this period without engaging in important philosophical inquiries. It was indeed in the solitude referred to, that the hint occurred, that gave rise to the System of the World, which is the main subject of his "Principia." As he was sitting alone in a garden, an apple falling from a tree led his thoughts to the subject of gravity, and reflecting on the operation of that principle, he began to consider, that as this power is not found sensibly diminished at the remotest distance from the centre of the earth to which we can rise, neither at the tops of the loftiest buildings, nor on the summits of the highest mountains, it was reasonable to conclude that it must extend much farther than was usually imagined. "Why not," said he to himself, "as high as the moon? and if so, her motion must be influenced by it. Perhaps she is retained in her orbit by it." Though the power of gravity is not sensibly weakened in the little change of distance at which we can place ourselves from the centre of the earth, yet it is very possible that as high as the moon this power may differ in strength much from what it is here. He made the calculation, but from having gone upon wrong data in supposing 60 miles to make a degree instead of 69½, the result did not come out according to his expectations; he therefore concluded that some other causes must be joined with the action of the power of gravity on the moon, and on this account he laid aside for a time any further thoughts upon the subject.

On his return to Cambridge in 1667 he was elected fellow of his college, and took the degree of M. A., and in 1669 Dr. Barrow resigned to him the mathematical chair.

In 1683 he sat down again to his great work, the "Principia," which was printed under the care of Dr. Halley, and published in 1687, under the title of "Philosophiæ Naturalis Principia Mathematica." This treatise in the course of a year and a half went through many editions, though at first it did not meet with that sort of applause to which it was entitled. One reason for this was, that Des Cartes had then got full possession of the world, and his philosophy was supposed to be better adapted to common understandings. When however the true value of his work came to be known, the approbation was universal, and nothing was heard from all quarters but admiration of what seemed to be the production of celestial intelligence, rather than of man. "Does Mr. Newton eat, drink, or sleep like other men?" said the Marquis de l'Hospital, one of the greatest mathematicians of the age. "I represent him to myself," he added, "as a celestial genius, entirely disengaged from matter."

In 1703 he was chosen president of the Royal Society of London, and retained that honourable office till his death.

In 1705, Queen Anne conferred on Mr. Newton the honour of knighthood. He died on the 20th March, 1727, in the 85th year of his age. Splendid funeral honours were paid to his remains, in a manner in every respect suitable to his extraordinary merit, and that high estimation in which he was deservedly held in every part of Europe. His body lay in state in the Jerusalem Chamber, adjoining the House of Lords, and at the interment the pall was supported by the Lord Chancellor, the Dukes of Montrose and Roxburgh, and the Earls of Pembroke, Sussex, and Macclesfield.

Sir Isaac Newton's temper is said to have been so mild that scarcely any accident could disturb it. One instance in particular is mentioned of this disposition: he had a favourite little dog called Diamond, which being left in his study, had overset a lighted candle among his papers, and burnt the almost finished labours of many years. This loss was irretrievable, yet the philosopher only exclaimed, "Oh Diamond, Diamond, thou little knowest the mischief thou hast done!"

LES DEUX.

II OF EVERY KIND SAVED. God said unto Noah, the end of all flesh is come before me; for the earth is filled with violence through them; and, behold, I will destroy them with the earth.

Make thee an ark of Gopher wood; rooms shalt thou make in the ark, and shall pitch it within and without with pitch.

And this is the fashion which thou shalt make it of: The length of the ark shall be three hundred cubits, the breadth of it fifty cubits, and the height of it thirty cubits.

A window shalt thou make to the ark; and the door of the ark shalt thou set in the side thereof; with lower, second, and third stories shalt thou make it.

In the six hundredth year of Noah's life, in the second month, the seventeenth day of the month, the same day were all the fountains of the great deep broken up, and the windows of heaven were opened.

And the rain was upon the earth forty days and forty nights.

In the self-same day entered Noah, Shem, Ham, and Japhet, the sons of Noah, and Noah's wife, and the three wives of his sons with them, into the ark.

They, and every beast after his kind, and all the cattle after their kind, and every creeping thing that creepeth upon the earth after his kind, and every fowl after his kind, and every bird of every sort.

And they went in unto Noah into the ark, two and two of all flesh, wherein is the breath of life.

Fifteen cubits did the waters prevail; and the mountains were covered.

And all flesh died that moved upon the earth, both of fowl, and of cattle, and of beast, and of every creeping thing that creepeth upon the earth, and every man.

Noah only remained alive, and they that were with him in the ark.

The ark rested in the seventh month, on the seventeenth day of the month, upon the mountains of Ararat.

On the first day of the tenth month the tops of the mountains were seen.

Noah sent forth a raven, which went forth to and fro until the waters were dried up. He also sent forth a dove; but the dove found no rest for the sole of her foot, and returned to the ark. At the end of seven days more, he sent forth the dove again, and the dove returned to him in the evening with an olive-leaf in her mouth. So Noah knew the waters were abated. At the end of seven days more he sent forth the dove again, which returned not.

And it came to pass in the six hundredth and first year, the first month, and the first day of the month, the waters were dried up from off the earth: Noah removed the covering of the ark, and looked, and behold, the face of the ground was dry.

And God spake unto Noah, saying, Go forth from the ark, thou, and thy wife, and thy sons, and thy sons' wives with thee.

Bring forth with thee every living thing that is with thee, and be fruitful, and multiply upon the earth.

II COVENANTS. First, that covenant which God made with Adam before the fall, which is called the covenant of works. Second, that covenant which God made with Adam immediately after the fall, by promising to send Jesus Christ to redeem all mankind from their sins who will believe in him, and practise the precepts of his Gospel; and which is called the covenant of grace.

II SACRAMENTS; Baptism, and the Supper of our Lord.

II PARTS of RELIGION, Natural and Revealed: the first supposes a God, a providence, and a future state of rewards and punishments; the latter likewise supposes an immediate mission from God himself, attested by miracles, &c.

II EYES as GUIDES to HISTORY. They are Geography and Chronology.

II MOTIONS of the EARTH. The earth performs two revolutions; one round its axis, which is called diurnal, and performed in twenty-four hours; the other round the sun, which is called annual, and is completed in twelve months. In the last-mentioned course it travels at the rate of 68,000 miles in an hour.

II HEMISPHERES. The Equator is a supposed circle of the earth, equidistant from both poles, and divides the globe into two hemispheres, one north, and the other south.

II TROPICS. Two circles, each parallel to and at 23½ degrees distant from the equator.

II POLAR CIRCLES. The arctic and antarctic, are parallel to the tropics, and 23½ degrees distant from the poles.

II SORTS of HISTORY, Sacred and Profane. Sacred history treats of religion only; Profane, of all history of every kind, except religion.

II ENGLISH UNIVERSITIES. Oxford and Cambridge. In Oxford there are 20 colleges and 5 halls; the former are very liberally endowed, but in the latter the students chiefly maintain themselves. This university is of great antiquity. It is said to have been styled an university before the time of King Alfred, and the best historians admit that this excellent prince was only a restorer of learning. Alfred built three colleges at

Oxford, one for divinity, another for philosophy, and another for grammar.

The University of Cambridge consists of twelve colleges and four halls; but though they are distinguished by different names, the privileges of the colleges and halls are in every respect the same.

II PRINCIPAL POEMS of HOMER. They are the Iliad and the Odyssey. The subject of the Iliad is the wrath of Achilles, which proved so fatal to the Greeks when besieging Troy; that of the Odyssey is the voyages and adventures of Ulysses after the sacking of that city.

II FAMOUS TRIUMVIRATES at ROME. Pompey, Cæsar, and Crassus established the first; and Augustus, Marc Antony, and Lepidus the second. This latter triumvirate gave the last blow to the already expiring liberty of the republic. Augustus having vanquished Lepidus and Antony, the triumvirate sunk into a monarchy.

II MOUNTAINS in Heathen Mythology. Parnassus and Helicon, at the feet of which flowed two streams whose waters were supposed to communicate the inspiration of prophecy and poetry.

II MYTHOLOGICAL RIVERS in HELL. Styx, which the gods used to swear by when they intended to make their oath very solemn; and Léthé, which caused whoever bathed in it to forget every thing that was past.

II PARTS of MEDALS. They are the two sides; one whereof is called the face, head, or *obverse*, the other the *reverse*. On the face of medals we have commonly the portrait of some great and illustrious person; usually, if not always, in profile. The coins of the kings of Macedon are the most ancient of any yet discovered on which portraits are formed; and Alexander the Great, who began his reign about 500 years B. C., is the earliest monarch whose medals have yet been discovered.

II KINDS of QUADRUPEDS that are covered with scales or shells instead of hair. They are the Pangolin, and the Armadillo or Tatou.

II PARTS of PHARMACY, Galenical and chemical. Pharmacy is that branch of medicine which teaches the choice, preparation, and mixture of medicines. Galenical, called the simple pharmacy, is that derived from the ancients, consisting in the knowledge and management of the materia medica, now in the hands of the apothecaries.

Chemical Pharmacy is the resolving of mixed bodies into their component parts, in order to separate the useless and bad, and collect and exalt the good.

II CLASSES of FOSSILS. Native and extraneous. Native fossils are those substances which are supposed to be natives of and to have existed primitively in the subterranean regions.

Extraneous or adventitious fossils are animal and vegetable remains, that, owing to particular circumstances, instead of decaying when buried in the earth, have more or less preserved their original form and structure, and are found penetrated by or converted into substances belonging to the mineral kingdom.

II GREAT ASYLUMS for disabled sailors and soldiers—Greenwich and Chelsea Hospitals.

GREENWICH.

There are traces of a royal residence at Greenwich so early as Edward I. A. D. 1300. Henry IV. dated his will in 1408 from this manor: it was a favourite residence of Edward IV. Henry VII. spent much of his time here. Henry VIII. made considerable additions to the buildings, and during his reign Greenwich became one of the principal scenes of that festivity for which his court was celebrated. Tournaments and revels were frequently held, and in 1513 the first masquerade ever seen in England was introduced here. Edward VI. kept Christmas here in 1552, and died in this place the July following. The Queens Mary and Elizabeth were both born here, and the latter christened with peculiar state. This palace was frequently visited by James I. and Charles I.; was afterwards assigned by parliament to the Protector; and, after the restoration, again devolved, with the park and appendages, to the crown; when the king, finding the whole building in a ruinous state, ordered it to be pulled down, and commenced a magnificent palace on its site, under the direction of Webb, the son-in-law of Inigo Jones, from whose papers the designs were said to have been made. One wing was all that was completed, at an expense of 36,000*l.*, in which the king occasionally resided; but no further progress was made in the building either in that or the succeeding reign. Soon after the accession of William and Mary a project was formed for providing an asylum for aged and disabled seamen. Sir Christopher Wren recommended that the unfinished palace at Greenwich should be completed and enlarged. This advice being adopted, he contributed his time and abilities in the superintendence of the works for several years without any emolument. Such was the origin of Greenwich Hospital, of which the foundation was laid June 3d, 1696, and which was gradually enlarged and improved, till it arrived at its present state of magnificence.

This splendid structure consists of four distinct quadrangular piles of buildings, distinguished by the names of the respective sovereigns in whose reigns they were founded or built. King Charles's building occupies the north-west angle, Queen Anne's the north-east, King William's the south-west, and Queen Mary's the south-east.

King Charles's building contains the apartments of the governor, lieutenant-governor, the council-room, and ante-chamber, with fourteen wards, wherein 300 pensioners may be accommodated. Queen Anne's building contains several apartments for inferior officers, with twenty-four wards for 437 pensioners. King William's building comprises the great hall, vestibule, and dome, designed and erected by Sir Christopher Wren, between the years 1698 and 1703. The west front, which is of brick, was finished about 1725, by Sir John Vanburgh, and contains eleven wards, wherein are 551 beds. Queen Mary's building was not finished till 1752; it is furnished with 1092 beds in thirteen wards.

The pensioners who are the objects of this noble charity must be seamen disabled by age, or maimed either in the king's service, or in the merchants' service, if the wounds were received in defending or taking any ship, or in a fight against a pirate. Foreigners who have served two years in the British navy become entitled to the benefits of this institution in the same manner as the natives. The widows of seamen are provided for, having the exclusive privilege of being nurses in the hospital. The number of pensioners is upwards of 2400; they are supplied with clothes, diet, and lodging, with a small allowance of pocket-money.

The funds of this establishment are principally derived from a duty of 6*d.* per month paid by every mariner either in the king's or merchants' service, the forfeited estates of the Earl of Derwentwater, and various benefactions.

CHELSEA.

This building was originally begun by James I. in the fifth year of his reign, intended for a college of learned divines, who might devote their time to the study and teaching of controversial divinity, especially those points in dispute between the churches of England and Rome. King James laid the first stone in the fifth year of his reign; but for want of money, the building went on slowly, and at length stood still, before an eighth part of the plan was executed.

The troubles of Charles I. caused all thoughts of finishing the work to be laid aside. After the Restoration, King Charles II. converted the unfinished buildings into a hospital for maimed and superannuated soldiers, retaining the title of "College." It was founded by Charles II., carried on by James II., and finished in the reign of King William and Queen Mary, by Sir Christopher Wren. The whole expense of the structure was 150,000*l.*; the extent of the ground is about 40 acres.

To defray the charge of this hospital, there is a considerable sum paid yearly out of the poundage of the army; besides one day's pay of each officer and each common soldier every year.

II FABULOUS SEA MONSTERS. According to the fables of the poets, Scylla and Charybdis were two sea monsters whose dreadful jaws were continually distended to swallow unhappy mariners; the one situated on the right and the other on the left extremity of the Strait of Messina, where Sicily fronts Italy.

Scylla, a rock at the entrance of the Straits of Messina, about 200 feet in height. Charybdis, a supposed whirlpool, 30 paces in diameter, situated within the Strait, in that part of the sea which lies between a projection of land named "Punta Secca," and another projection on which stands the town called "Lanterna," or the lighthouse. The ancient and modern writers who have written concerning Charybdis, have all (Spallanzani excepted) supposed it to be a whirlpool. Homer is the first writer who has represented Charybdis as a monster, which three times in a day drinks up the water, and three times a day emits it forth.

Buffon adopts the idea of Homer, and places Charybdis amongst the most celebrated whirlpools of the sea, and that it absorbs and rejects the water three times in twenty-four hours. Strabo tells us that ships swallowed in this whirlpool are carried by the current to the shore of Tauromenium (the present Taormina), 30 miles distant.

In confirmation of this tradition, an amusing though tragical tale is told by Kircher, of one Nichola Pesce, a Messinian diver, whose long acquaintance with the sea at last brought it to be almost his natural element. He frequently was known to spend five days at sea with no other provisions than the fish he caught and ate raw. "His fame was reported to Frederick King of Sicily, who ordered that Nichola should be brought before him. The curiosity of this monarch had been long excited by the accounts he had heard of the bottom of the gulf of Charybdis: he therefore conceived that it would be a proper opportunity to have more certain information, and commanded our poor diver to examine the bottom of this dreadful whirlpool: as an incitement to his obedience, he ordered a golden cup to be flung into it. Nicholas was not insensible to the dangers to which he was exposed, dangers best known only to himself; and he therefore presumed to remonstrate; but the hopes of the reward, the desire of pleasing the king, and the pleasure of showing his skill, at last prevailed. He instantly jumped into the gulf, and was swallowed as instantly up in its bosom. He continued for three-quarters of an hour below; during which time the king and his attendants remained upon shore, anxious for his fate; but he at last appeared, buffeting upon the surface, holding the cup in triumph in one hand, and making his way good among the waves with the other. As may be supposed, he was received with applause upon his arrival on shore; the cup was made the reward of his adventure; the king ordered him to be taken proper care of; and as he was somewhat fatigued and debilitated by his labour, after a hearty meal he was put to bed, and permitted to refresh himself by sleeping.

"When his spirits were thus restored, he was again brought to satisfy the king's curiosity with a narrative of the wonders he had seen; and his account was to the following effect: — He would never, he said, have obeyed the king's commands had he been apprised of half the dangers that were before him. There were four things, he said, that rendered the gulf dreadful, not only to men, but even to the fishes themselves; first, the force of the water bursting up from the bottom, which requires great strength to resist; secondly, the abruptness of the rocks, that on every side threatened destruction; thirdly, the force of the whirlpool, dashing against those rocks; and, fourthly, the number and magnitude of the polypous fish, some of which appeared as large as a man, and which, every where sticking against the rocks, projected their fibrous arms to entangle him. Being asked how he was able so readily to find the cup that had been thrown in, he replied, that it happened to be flung by the waves into the cavity of a rock, against which he himself was urged in his descent. Being requested to venture once more into the gulf, for further discoveries, he at first refused; but the king, desirous of having the most exact information possible of all things to be found in the gulf, repeated his solicitations; and, to give them still greater weight, produced a larger cup than the former, and added also a purse of gold. Upon these considerations, the unfortunate Pessacola once again plunged into the whirlpool, and was never heard of more."

Spallanzani determined to investigate by his own observation the truth of the opinion which had been entertained with respect to Charybdis. The result of his observations and experiments led him to the conclusion that there was no whirlpool in Charybdis at that time; though it might have been different when the sea was tempestuous.

Its present name among the people of the country is Calofaro. The phenomenon of the Calofaro is observable when the current sets in descending; for when the current sets in from the north, the pilots call it the "descending rema," or current; and when it runs from the south, the "ascending rema." Spallanzani learned from the pilots who had seen Charybdis in its greatest fury, that when the wind and current are contrary, there are four and sometimes more whirlpools visible. If at this time small vessels are driven into the Calofaro by the current or wind, they are seen to whirl around the rock and plunge, but are never drawn into the vortex. They merely sink when filled with water by the waves beating over them. "He who endeavours to avoid Charybdis, dashes upon Scylla," was a proverb applied by the ancients to those who, while they sought to shun one evil, fell into a worse.

If it be asked how it happens that Scylla and Charybdis are now less dangerous (says Spellanzani) than they were in former times, as Scylla still remains such as it was in the time of Homer, and Charybdis must at present be more perilous, because the Strait of Messina has become narrower? the answer is, that the difference arises from the improvement in the art of navigation, which, formerly in its infancy, dared not launch into the open sea, but only ventured to creep along the shore.

II KINDS of BODIES denominated MUMMIES. The first are only carcasses dried by the heat of the sun, and by that means kept from putrefaction; these are frequently found in the dry sands of Lybia. Some say they are the bodies of deceased people, buried there on purpose, to keep them entire without embalming; others that they are the carcasses of travellers, who have been overwhelmed with clouds of sand, raised by the hurricanes frequent in those deserts. These mummies are of no use in medicine, and are only preserved as curiosities.

The second kind of mummies are bodies taken out of the pits or catacombs, near Cairo, in which the Egyptians deposited their dead after embalming. They constitute the mummy once so valued, and to which such extraordinary virtues are ascribed.

The preparation of mummies is of so old a standing, that it was in use in Egypt before the time of Moses. The coffins in which the mummies were placed were made of sycamore wood, which has been known to keep for 3000 years; but the tree properly thus called was very different from our sycamore.

II ORDERS of ROMAN NOBILITY. There were two orders or degrees among the Roman nobility, that of the *senators* and that of the *knights;* after these two came the people.

In ancient Rome, a certain age was required for a senator, as is often mentioned by the old writers, though none of them have expressly said what it was. The age for entering into the army was settled by Servius Tullius at seventeen years, and they were obliged to serve ten years in the wars before they could pretend to any civil magistracy. This fixes the proper age for suing for the quæstorship, or the first step of honour, to the 28th year; and as this office gave an admission into the senate, so the generality of the learned seem to have given the same date to the senatorian age. The senate of ancient Rome was, of all senates, the most celebrated during the splendour of the republic; it exercised no contentious jurisdiction; it appointed judges either out of the senate, or among the knights, but it never stooped to judge any processes in a body. The senate concerted matters of war, appointed who should command the armies, sent governors into the provinces, took order and disposed of the revenues of the commonwealth. Yet did not the whole sovereign power reside in the senate; it could not alone elect magistrates, make laws, nor decide of war and peace, but in all these cases the senators were to consult the people. Under the emperors, when the senate became despoiled of most of its offices, they began to hear causes. The senate could not be assembled in a private or profane place, but always in one set apart and solemnly consecrated to that use by the rites of augury. Their meetings were commonly held in temples dedicated to particular deities, as in that of Jupiter, Apollo, Mars, Castor, Bellona, Concord, &c.

On two special occasions the senate was always held without the gates of Rome, either in the temple of Bellona or of Apollo. 1st, For the reception of foreign ambassadors, and especially of those who came from enemies, who were not permitted to enter the city. 2dly, To give audience and transact business with their own generals, who were never allowed to come within the walls as long as they had the actual command of the army. On their days of meeting they could not enter upon any business before the sun was risen, nor finish after it was set; every thing transacted by them before or after that time was null and void, and the author of it liable to censure. At the head of the senate sat the dictator and consuls in chairs of state, and the other magistrates sat next to the consular chairs, each according to his rank.

The robes of the senators were called *laticlavium* and *augusticlavium*. The laticlavium was a kind of tunic or long coat, faced with broad slips of purple. The augusticlavium was a similar garment, with narrower stripes. The fashion also of their shoes was peculiar, and different from that of the rest of the city; this difference appeared in the colour, shape, and ornament of the shoes. The colour of them was black, while others wore them of any colour, perhaps agreeable to their several fancies; the form of them was something like to a short boot, reaching up to the middle of the leg, as they are sometimes seen in ancient statues and bas-reliefs; and the proper ornament of them was a half-moon sewed or fastened upon the fore-part of them, near the ankle.

Consuls, prætors, ædiles, tribunes, &c. during the year of their magistracy always wore the prætexta or gown, bordered round with a stripe of purple, and worn over the laticlavium.

II SORTS of LETTERS in the English language, vowels and consonants, the latter divided into mutes and semi-vowels.

II NUMBERS. Singular and plural.

II SORTS of PREPOSITIONS. Separable and inseparable.

II SORTS of CONJUNCTIONS. Copulative and disjunctive.

II ARTICLES. Definite and indefinite.

II PARTICIPLES. Active and passive.

II PARTS of SYNTAX. Agreement and government.

II METHODS of COMPOSITION. Analytical and synthetical.

II DIVISIONS of the ancient ROMAN people, called Optimates and Populares.

According to Tully's account, the optimates were the best citizens, or those who desired their actions to be approved by the better sort of people; and the populares those who, out of a thirst of vain glory, did not so much consider what was right, as what would please the populace, and get an interest in them. The Protelarii were the poorer sort of citizens, whose estate did not exceed 1500 pieces of silver. They were distinguished from those who were worth little or nothing; these last were called Capite Censi.

II PERIODICAL motions of the waters of the SEA, called TIDES; called also the *flux* and *reflux*, or the ebb and flow.

The sea is observed to flow for certain hours from south towards north, in which motion or flux, which lasts about six hours, the sea gradually swells, so that, entering the mouths of rivers, it drives back the river-waters toward their heads or springs.

After a continual flux of six hours, the sea seems to rest for about a quarter of an hour; after which it begins to ebb or retire back again from north to south, for six hours more, in which time, the water sinking, the rivers resume their natural course. Then, after a seeming pause of a quarter of an hour, the sea again begins to flow as before, and thus alternately.

Thus does the sea ebb twice a day, and flow as often, but not in the same hours. The period of a flux and reflux is 12 hours, 50½ minutes, so that the tides return later and later each day by 50½ minutes, which is the excess of a lunar day above a solar one, since 28½ lunar days are nearly equal to 29½ solar ones. So that the sea flows as often as the moon passes the meridian, both the arc above and that below the horizon, and ebbs as often as she passes the horizon, both the eastern and western point of it.

This farther agreement we observe between the moon and the sea, that the tides, though constant, are not equal, but are greatest when the moon is in conjunction or opposition to the sun, or at the time of new and full moon, and least when in quadrature to it. This increase and diminution constitute the *spring* and *neap* tides: the augmentation becomes still more observable when the moon is in its perigee, or nearest the earth. The lowest as well as the highest water is at the time of the spring-tides; the neap-tides neither rise so high nor fall so low.

Lastly, those tides are the greatest which happen in the new and full moon, and the time of the equinoxes, when the moon is in its perigee. These tides are often still more increased by the equinoctial winds, which are sometimes so powerful as to produce a greater tide before or after the equinox than that which happens in the usual course, at the time of the equinox itself.

The same things are observed throughout most of the coasts of Europe, only that the tides are so much the less, and happen the later, as the coasts are the more northerly.

II SORTS of GASES, simple and compound. The simple gases, according to our present knowledge, are three, viz:—

1. Hydrogen.
2. Oxygen.
3. Azote or nitrogen (called azote from its incapacity of supporting animal life).

The compound gases and vapours which have been clearly discriminated from each other, are,

4. Nitrous gas, from azote and oxygen.
5. Nitrous oxyd, from azote and oxygen.
6. Carbonic oxyd, from carbon and oxygen.
7. Carbonic acid, from carbon and oxygen.
8. Carburetted hydrogen, from carbon and hydrogen.
9. Olefiant gas, from carbon and hydrogen.
10. Sulphuretted hydrogen, from sulphur and hydrogen.

11. Sulphurous acid, from sulphur and oxygen.
12. Fluoric acid, from hydrogen and oxygen?
13. Muriatic acid, from hydrogen and oxygen?
14. Oxymuriatic acid, from muriatic acid and oxygen.
15. Ammoniacal gas, from azote and hydrogen.
16. Phosphuretted hydrogen, from phosphorus and hydrogen.
17. Arseniuretted hydrogen, from arsenic and hydrogen.
18. Nitric acid, from azote and oxygen.
19. Nitrous acid, from azote and oxygen.
20. Aqueous vapour or steam, from oxygen and hydrogen.
21. Alkoholic vapour, from carbon and hydrogen.
22. Ethereal vapour, from carbon and hydrogen.

It is remarkable that in the above list of compound gases no one has been proved to contain more than two elements, though Berthollet and some others conceive certain gases to contain three elements; namely, carbon, hydrogen, and oxygen, and denominate them oxy-carburetted hydrogen; but they have given no proof of the existence of such gases.

The nature of simple gases.—The constitution of an elastic fluid was first pointed out and demonstrated by Newton, in the 23d prop. of the second book of the Principia; namely, that it consists of particles that repel one another by a force which varies in the simple inverse ratio of the central distances. At least a fluid so constituted would exhibit the same mechanical properties as atmospheric air. On the nature of this repulsive power there have been several speculations: some have imagined it to be magnetical, others electrical, and others, with more seeming probability, have ascribed it to heat. Indeed, when it is considered that the elasticity increases and diminishes with the temperature to the most distant points we can attain, heat must be a principal if not the sole cause of aerial repulsion.

The nature of compound gases.—By compound gas we mean an elastic fluid which arises from the chemical union of the elements of two or more elastic fluids, or of one elastic fluid and another inelastic body; thus, a certain quantity of carbonic oxyd gas and oxygen gas may be combined so as to make carbonic acid gas, which is different from either of the ingredients in volume, and in other essential properties. Also, from oxygenous gas and sulphur may be formed sulphurous acid gas. These compound gases are chiefly modern discoveries, and their nature has never yet been very satisfactorily explained. They are observed to agree with the simple gases in their mechanical relations. From this fact it would seem that by applying the Newtonian doctrine they must be constituted of particles repulsive of each other, like the simple gases.

II SORTS of WRITTEN CHARACTERS. Written characters are either signs for things or signs for words: Of the former sort are the pictures, hieroglyphics, and symbols employed by the ancient nations; of the latter sort are the alphabetical characters now used by all Europeans. Pictures were the first essay towards writing, and we find that this was the only writing known in Mexico when America was first discovered. By historical pictures the Mexicans transmitted to posterity their most important transactions; but as pictures could do no more than represent external events without describing their qualities, or conveying any idea of the words of men, it was found necessary to devise some other mode; hence arose, to supply this defect, the invention of hieroglyphical characters, which may be considered the second stage of the art of writing.

Hieroglyphics consist of certain symbols, which are made to stand for invisible objects, on account of their analogy or resemblance to such objects. Some traces of these characters were found intermixed with the historical pictures of the Mexicans; but Egypt was the country where this sort of writing was studied and brought into a regular art.

As writing advanced, these symbols of things invisible were changed to certain arbitrary marks, which stood for objects, though without any resemblance to those objects. Of this nature was the method of writing practised among the Peruvians, who made use of small cords, of different colours, and by knots upon these of various sizes, and differently arranged, contrived signs for giving information, and communicating their thoughts to one another.

Similar to these are the written characters used to this day in China. The Chinese have no alphabet of letters or simple sounds to compose their words, but every single character is significant of an idea; every mark stands for some one thing, or object, consequently the number of these characters must be immense.

This manner of writing has spread through several nations of the East. It is said that the Japanese, the Tonquinese, and the Coroeans, who speak different languages from one another, and from the inhabitants of China, use the same written characters; and thus intelligibly correspond with each other in writing, though ignorant of the language spoken in their several countries.

At length men became sensible of the imperfection, the ambiguity, and tediousness of these hieroglyphical characters, and began to devise signs which should not stand directly for things, but for the words which they used in speech for naming those things; and found that although the number of words in every language be very great, yet the number of articulate sounds used in composing words is comparatively small; hence they were led to invent signs for each of those simple sounds that are employed in forming words; and they observed that, by joining together a few of these signs, it would be practicable to express in writing the whole combination of sounds which our words require.

The first step in this new progress was the invention of an alphabet of syllables, which probably preceded the invention of an alphabet of letters among some of the ancient nations, and which is retained to this day in Ethiopia, and some countries of India.

To whom we are indebted for the admirable and useful discovery of letters does not appear. There seems some reason to conclude, from the books which Moses has written, that with the Jews, and probably with the Egyptians, letters had been invented prior to his age. The universal tradition among the ancients is, that they were first imported into Greece by Cadmus the Phœnician, who, according to the common system of chronology, was contemporary with Joshua; but according to Sir Isaac Newton's system, contemporary with King David. As the Phœnicians are not known to have been the inventors of any art or science, though by means of their extensive commerce they propagated the discoveries made by other nations, the most probable conjecture is, that they took rise in Egypt, the first civilised kingdom of which we have any authentic account.

Writing was long a kind of engraving: pillars and tables of stone were first used, and afterwards plates of soft metal; but as writing became more common, lighter and more portable substances were employed.

In later times, the hides of animals made into parchment were the most common material. Our present method of writing on paper is an invention of no greater antiquity than the fourteenth century.

II BOOKS of HOMILIES. The homilies of the established church of England are contained in two books; the former of which was published in the reign of Edward VI., and the latter in the beginning of the reign of Elizabeth. They were ordered to be read in such churches as were not provided with a sufficiently learned minister, in order to prevent unsound doctrine being taught in remote places. The authors of these homilies were, the great reformers Cranmer, Ridley, Latimer, and Jewel.

II PARTS of the TALMUD. The Talmud is the body of the Hebrew law, and consists of two general parts, one called the Mischna, and the other the Gemara.

The Jews divide their laws into *written*, which is that contained in the books of Moses, and *unwritten*, which is that conveyed by tradition. This latter is, in fact, nothing more than an interpretation of the former by the ancient rabbins.

The Talmud contains the traditions of the Jews, their polity, doctrine, and ceremonies, which they observe as religiously as the law of God itself: they would never put them in writing till they were compelled to it by the destruction of Jerusalem, and till they saw themselves dispersed through the world.

II ORDERS of THANES. Thane was an ancient dignity among the English or Anglo-Saxons. Skene makes thane to have been a dignity equal to that of the son of an earl; but Camden says that thanes were only dignified by the offices they bore.

There were two orders of thanes, *king's thanes*, and *ordinary thanes*. The first were those who attended our English-Saxon kings in their courts, and who held lands immediately of the king. Their origin is referred to King Canutus, who taking the chief of the Danish nobility, to the number of 3000, for his guard, and arming them with battle-axes, and sabres with gilt handles, called them "thing lith," from the two Danish words *theing* or *thein*, body of nobility, and *lith*, order of battle. Soon after the Conquest, this name was disused, and they were called king's barons, *barones regis*.

The ordinary thanes, or "thani minores," were the lords of manors, who had particular jurisdiction within their limits, and over their own tenants.

These changed their names to barons; hence their courts are called "courts baron" to this day.

II PRESTER JOHNS. Prester John, or Jean, was an appellation given to the emperor of the Abyssinians, because anciently the princes of this country were priests, and the word Jean in their language signifies king.

He was first made known in Europe under this title by the French. His empire was originally of great extent; but afterwards it was confined to six kingdoms, each about the size of Portugal.

There was also Prester John of Asia. His jurisdiction was in the country of Cangingu, between China, Sifan, and Thibet, a kingdom highly valued by the Chinese for its policy and fortified cities, though they have usually the utmost contempt for foreign countries.

The history of Prester John is involved in considerable obscurity and confusion. Some apprehend that there were two persons in the East under this appellation, agreeably to the preceding account; whilst others consider the Abyssinian Prester John as a fictitious character.

The arms of the bishopric of Chichester are, azure, a Prester John sitting on a tomb-stone, in his left hand a mound, his right hand extended, or, with a linen mitre on his head, and in his mouth a sword, fess-wise, all proper.

II ORDERS of TRIBUNES, called *Tribunus Plebis*, or tribune of the people, and *Tribunus Militum*, or tribune of the soldiers.

The tribunes of the people were magistrates chosen out of the commons to protect them against the oppressions of the great, and to defend the liberties of the people against the attempts of the senate and consuls.

They were established in the year of Rome 260. Their number at first was but two, then five, and afterwards ten.

The tribunes of the soldiers were officers of the Roman army, who commanded divisions of legions. There was a distinction of the tribunes into *laticlavii* and *angusticlavii*: those born of noble families were allowed, after they were made the tribune of a legion, to take the latus-clavus; the rest were only to wear the angustus-clavus.

The tribunes of the soldiers were of older standing than the tribunes of the people, the latter being elected out of the former.

Besides the tribunes, there were other magistrates, called prætors. In the first ages of the commonwealth, all the great magistrates were called prætors; afterwards, the title was bestowed on the principal officers of the army; and at last it became restrained to a particular magistrate. In the time of Justinian the office of prætor was entirely abolished.

The prætorian bands were soldiers of the emperor's guard, so called, as some say, from their station being in the palace or court called Prætorium.

Others attribute their institution to Scipio Africanus, who first established a company of the bravest men in his army as his body-guard, to be always by his side in battle.

Mr. Gibbon mentions Augustus as their founder. The prætorian band consisted originally of nine or ten thousand men. Vitellius increased them to sixteen thousand, and it does not appear that they sunk below that number.

II KINDS of PRINTING, called Typographia; the one for books, the other from copper plates, for pictures. The first called *common press printing*, the second *rolling press printing*. The great difference between the two is, that the characters of the former are cast in relievo, and those of the latter are engraven in creux.

Who the first inventors of European printing were, in what city, and what year it was set on foot, is a problem long disputed. As the Grecian cities contended for the birth of Homer, so do the German cities for that of printing.

Mentz, Haerlem, and Strasburgh, each claim the honour; but Mentz seems to have the greatest number of voices. It is said to have been invented by one John Faust of that city, about 1440.

Printing was introduced into England, sometime between 1470 and 1474, by William Caxton.

Some authors tell us, that Faust carrying a parcel of his bibles to Paris, and offering them for sale as MSS., the French, looking at the number of his books, and their exact conformity with each other, even to a point, and that the best writers could not be near so exact, concluded there was witchcraft in the case, and either actually indicting him as a conjuror, or threatening to do so, extorted the secret. Hence the origin of the popular story of Dr. Faustus.

II VOLUMES of DOMESDAY or DOOMSDAY BOOK; the judicial book, or book of the survey of England; an ancient record, made in the time of William the Conqueror, by his order, and with the advice of his parliament; upon a survey or inquisition of the several counties, hundreds, tithings, &c. The design of the book is to serve as a register of the tenures of estates, and from which, decision is made whether lands be ancient demesne or not. It was begun in the year 1081, but not completed till 1087.

Domesday book is still remaining fair and legible, consisting of two volumes, a greater and a less; the greater comprehends all the counties of England, except Northumberland, Cumberland, Durham, Westmorland, and part of Lancashire, which were never surveyed, and except Essex, Suffolk, and Norfolk, which are in the lesser volume.

This book was formerly kept under three different locks and keys; one in the custody of the treasurer, and the others of the two chamberlains of the exchequer. It is now deposited in the chapter-house at Westminster.

II CHIEF EGYPTIAN DEITIES. OSIRIS and ISIS are accounted in Mythology the principal deities of the Egyptians; the former as the symbol or emblem of the sun, which was the first object of their idolatry; and the latter as that of the moon; and it is said that their names refer to those luminaries, since, in their language, Osiris denotes "one who sees clear;" and Isis, "the ancient," an expression, which among them signified the moon.

The Egyptians worshipped Isis as "the cause of abundance," attributing to her the inundations of the Nile, the source of fertility and plenty.

II POWERS of ELECTRICITY. Electricity is the name of an unknown natural power, which produces a great variety of peculiar and surprising phenomena, the first of which are supposed to have been observed in a mineral substance called *amber*.

The two electrical powers are analogous, yet contrary to each other, and are, in all cases of the production of electricity, as well as in the effects, to be found closely connected with each other; the one is called *vitreous*, and the other *resinous* electricity.

II SORTS of ECLIPSES. An Eclipse is the disappearance of a heavenly body, caused either by the interposition of an opake body between it and the observer, or by the loss of the reflected light of the sun. To the first class belong solar eclipses, and occultations of the fixed stars by the moon or planets; to the second, lunar eclipses, and eclipses of the satellites of Jupiter.

An eclipse of the sun is produced by the interposition of the moon between that luminary and the earth, for which reason it can never happen at any other time than at the conjunctions or new moons. The moon is incomparably less than the sun, yet, from its nearness to us, its apparent diameter differs very little from that of the sun, and even sometimes exceeds it. Suppose an observer situated in the continuation of a straight line, that unites the centres of the sun and moon, he will see the former of these bodies eclipsed. If the apparent diameter of the moon surpasses that of the sun, the eclipse will be total, and the observer will be entirely plunged in the cone of shade which is projected behind the moon ; if the diameters are equal, the point of the cone will terminate at the earth's surface, and there will be a momentary total eclipse. If the diameter of the moon be less than that of the sun, the observer will see a zone of the sun surrounding the moon like a ring, and the eclipse will be central and annular. And, lastly, if the observer on the earth's surface is not exactly in the line joining the centres, the eclipse may be partial, that is, a part of the solar disc may be hid, while the remaining part continues perfectly visible. Total eclipses, which are rare, are remarkable for the darkness which accompanies them, and which they spread over different parts of the surface of the earth, in the same manner as the shadow of a cloud carried by the winds sweeps over the mountains and the plains, depriving them, for some instants, of the light of the sun. This total darkness, under favourable circumstances, may last about five minutes.

The earth being an opake body, enlightened by the sun, it necessarily projects a shadow into the regions of space in a contrary direction : when it so happens that the moon, in the course of her revolution about the earth, falls into this shadow, she loses the sun's light, by which alone she is visible, and appears to us *eclipsed.*

II DIVANS. In Turkey there are two sorts of Divans, that of the grand signior, called the council of state, which consists of seven of the principal officers of the empire. The grand signior never gives audience to ambassadors, except on Tuesday, on which day the divan is assembled. This council is held on the ground-floor of a square tower, which bears the same name. The vizir, the great judges of Europe and Asia, the grand treasurer, &c. &c. sit on the benches round the hall ; and above the seat of the vizir, facing the entrance, is a little window, grated, and raised about nine or ten feet, from which the grand signior may hear all that passes ; but where he cannot, as they would wish to have it believed, either be assassinated or assassinate. — The other divan is that of the grand vizir, formerly composed of six ordinary vizirs, or pachas with three tails, whose reputation for wisdom was not to be equivocal. The vizir asked their opinion when he thought it necessary. To this council were likewise admitted the mufti and the two kodileskers, when the law was to be consulted. Selim, however, soon after his accession to the throne, composed this council of twelve persons, the most distinguished by their office. The vizir and the mufti are the presidents of it; the one in his quality of lieutenant-general of the empire for temporal affairs; the other as vicar of the sultan, for the interpretation and depositary of the laws. The other ten members are the *kiaya bey*, the *reis-effendi*, the *tefterdar-effendi*, the *tehélébi-effendi*, the *tersana-emini*, the *tchiaoux-bachi*, the two *ex-reis-effendi*, and two *ex-tefterdars-effendi*.

II CELEBRATED FACTIONS in ITALY. The Guelphs and Gibellins.

These factions kept Germany and Italy in perpetual agitations for three centuries; the Guelphs asserting the power of the see of Rome, and the Gibellins contending for the emperor's right of sovereignty. The account of their origin is very obscure; but most writers affirm that they arose about the year 1240, upon the Emperor Frederic II. being excommunicated by Pope Gregory IX.

II CELEBRATED POLITICAL parties in England, called TORIES and WHIGS.

During the unhappy war which brought King Charles I. to the scaffold, his adherents were called Cavaliers, and those of the parliament Round-heads, which two names were afterwards changed into those of Tories and Whigs. The Tories are said to have derived their name from a kind of robbers or banditti in Ireland, who kept on the mountains, or in the islands formed by the vast bogs in that country, called Tories, a cognomen still borne by them, with that of Rapparees. The king's enemies accusing him of favouring a rebellion which broke out about that time in Ireland, gave his partisans the appellation of Tories: the Tories, on the other hand, to be even with their enemies, who were closely leagued with the Scots, gave them the name of Whigs, who, living in the fields and woods, these unhappy fugitives had often no other subsistence for a long time than cow's milk; Whig signifying whey.

The Cavaliers or Tories had then principally in view the political interests of the king, the crown, and the church of England; and the Round-heads, or Whigs, chiefly maintaining the rights and interests of the people and of Protestantism; nor have the two factions yet lost their first views, though their first names are entirely disused.

II ORDERS of TROUBADOURS. These were ancient poets of Provence, who wrote, set, and sang their own verses.

The poetry of the first troubadours consisted of sonnets, pastorals, songs, and satires: the second class of troubadours composed and sang metrical romances of chivalrous adventures.

About the middle of the twelfth century, these minstrels began to be esteemed throughout Europe: they flourished about two hundred and fifty years, viz. from about 1130 to 1382. Some authors make their numbers to have been seventy-six, and others ninety-six: among them was an emperor, Frederic I., and two kings, Richard I. of England, and a king of Arragon, with a dauphin, several counts, &c.

II COLLEGES of BUTCHERS!! Among the ancient Romans there were three kinds of established butchers, viz. two colleges, or companies, composed each of a certain number of citizens, whose office was to furnish the city with the necessary cattle, and to take care of preparing and vending their flesh. One of these communities was confined at first to the providing of hogs, whence they were called *suarii;* and the other were charged with cattle, especially oxen, whence they were called *pecuarii*, or *boarii.* Under each of these was a subordinate class, whose office was to kill, prepare, &c. called *lani*, and sometimes *carnifices.* Brissonius, Modius, and others mention a pleasant way of selling meat, used for some ages among this people: the buyer was to shut his eyes, and the seller to hold up some of his fingers; if the buyer guessed aright how many it was the other held up, he was to fix the price; if he mistook, the seller was to fix it. This custom was abolished by Apronius, prefect of Rome, who in lieu thereof introduced the method of selling by weight.

II METHODS of manufacturing STOCKINGS,—by *knitting* and by *weaving*. Anciently the only stockings in use were made of cloth or milled stuff, sewed together on the legs, as may be seen in the portraits of King Henry VIII.; but since the invention of the two above-mentioned methods, stockings have been made of wool, cotton, silk, thread, &c. Henry II. of France was the first who wore silk stockings, and the first occasion was at the wedding of his sister to the Duke of Savoy, in 1559.

Dr. Howell, in his History of the World, relates that Queen Elizabeth, in 1561, was presented with a pair of black knit silk stockings, by her silk woman, Mrs. Montague, and thenceforth she never wore cloth ones any more. The same author adds, that King Henry VIII. ordinarily wore cloth hose, except there came from Spain by great chance a pair of silk stockings. His son King Edward VI. was presented with a pair of long Spanish silk stockings by Sir Thomas Gresham, and the present was then taken much notice of. Hence it should seem, that the invention of knit silk stockings originally came from Spain. Knitting was first practised in England in the third year of the reign of Elizabeth, 1561.

THE HISTORY of SHOES is more obscure. Baudoin maintains that God in giving Adam skins of beasts to clothe him, did not leave him to go barefooted, but gave him shoes of the same matter; that after raw skins, men came to make their shoes of rushes, broom, paper, flax, silk, wood, iron, silver, and gold; so different has their matter been. Nor was their form more stable, with regard either to the shape, colour, or ornaments; they have been square, high, low, long, and quite even, cut, carved, &c. Pliny tells us, that one Tychius, of Bœotia, was the first who used shoes.

Xenophon relates, that the ten thousand Greeks who had followed the young Cyrus, wanting shoes in their retreat, were forced to cover their feet with raw skins, which occasioned them great inconveniences.

The patricians among the Romans wore an ivory crescent on their shoes. Heliogabalus had his shoes covered over with a very white linen, in conformity to the priests of the sun, for whom he professed a very high veneration: this kind of shoe was called *udo* or *odo*. Caligula wore shoes enriched with precious stones. The Indians, like the Egyptians, wore shoes made of the bark of the papyrus. The Turks always put off their shoes, and leave them at the doors of the mosques.

II KINDS of OILS. Oils are divided into two kinds, *fixed oils*, and *volatile* or *essential oils*. Fixed oils are obtained by *pressure* from the seeds of many vegetables, viz. almond, linseed, poppy, &c., and are compounds of carbon, hydrogen, and oxygen. They readily unite with the alkalies, dissolve sulphur, and are extremely combustible. When distilled with nitric acid, they are decomposed, and oxalic acid is formed; and if exposed to a steam of chlorine, they are rendered thick and tenacious like wax.

Volatile oils are obtained from vegetables by *distillation*. They possess a penetrating smell, are soluble in alcohol, unite with the alkalies with difficulty, and are volatilised at a moderate temperature; thus their adulteration with fixed oils may easily be detected by dropping a a small portion on a piece of paper, and exposing it to a moderate heat; if any mark remain, it is caused by a fixed oil.

II CLASSES of ENGLISH TREES. Mr. Ray distinguishes the trees and shrubs of our native growth of England into, I. Such as *have their flower disjoined and remote from the fruit;* which are,—

1. The *nuciferous* trees, or such as bear nuts; as the walnut-tree, the hazel-nut-tree, the beech, the chesnut, and the common oak.

2. *Coniferous* trees, or such as bear a squamous or scaly fruit, of a conical figure, and a woody or hard substance, containing many seeds, which, when they are ripe, the cone opens or gapes in its several cells or partitions, and lets drop out. Of this kind are the Scotch firs, male

and female; the pine, which in our gardens is called the Scotch fir; the common alder-tree, and the birch-tree.

These trees are also resiniferous, by reason that coniferous trees are generally covered with a bark that abounds in resin.

3. *Bacciferous* trees, are such as bear berries; as the juniper and yew-tree.

4. *Lanigerous* trees, or such as bear a woolly, downy substance; as the black, white, and trembling poplar, and willows and osiers of all kinds.

5. Trees *which bear their seeds* (having an imperfect flower) *in leafy membranes and cases;* as the horn-beam or hard-beam, called in some places the horn-beech.

II. Such *as have their fruits and flowers contiguous;* which are either with the flower placed on the top of the fruit, or adhering to the base or bottom of the fruit. Of the former kind, some are *pomiferous*, as apples and pears; and some *bacciferous*, as the sorb or service-tree, the white-thorn, or hawthorn, the wild rose, sweet-briar, currants, the great bilberry-bush, honeysuckle, ivy, &c.

The latter kinds are either such as *have their fruit moist and soft when ripe*, as 1, *Pruniferous* ones, whose fruit is pretty large and soft, with a stone in the middle; as the black-thorn or sloe-tree, the black and white bullace-tree, the common wild cherry, the black cherry, &c.

2. *Bacciferous* trees, as the strawberry-tree, common in the west of Ireland, mistletoe, water-elder, the dwarf or spurge laurel, the viburnum or wayfaring-tree, the dog-berry-tree, the sea black-thorn, the berry-bearing elder, the privet, barberry, common elder, the holly, the bramble, and the spindle-tree or prick-wood.

Or such as *have their fruit* dry when ripe; as the bladder-nut-tree, the box-tree, the common elm and ash, the maple, the gaule or sweet willow, common heath broom, dyer's weed, furze or gorse, and the lime-tree.

II METHODS of COINING. The art of making money, called coining, has hitherto been chiefly performed by the *hammer* or the *mill.* The first method has been long generally disused, though it was the only one known till the reign of Henry II. of France, when the coining-mill was invented by Antoine Brucher, a French engraver, and the first money was struck with it in that kingdom in the year 1553. The use of it continued there till 1585, when in the 12th year of Henry III. it was laid aside on account of its great expense, in comparison of the coinage with the hammer; nor was it revived till the year 1645, when by an edict of Louis XIV. it was established for perpetuity. Queen Elizabeth had milled money struck in England so early as the year 1562; but it did not continue for more than ten years; and the hammer was again adopted, as less expensive. This example was soon followed in France, till the subsequent success of the mill in England was probably the cause of its re-establishment in that kingdom in 1645. Briot, a French artist, failing to induce the government of France to adopt the use of the mill, came to England in 1623.

The coinage of England is performed at a building on Tower-hill, connected with the Tower of London; where there is a corporation for it, under the title of the *Mint*.

Formerly there were here, as there are still in other countries, what we call the *rights of seignorage* and *brassage;* but since the eighteenth year of King Charles II. there is nothing taken, either for the king or for the expenses of coining; it having been settled, by act of parliament, that all money should be struck at the public expense, so that weight is returned for weight to all persons who carry their gold and silver to the Tower.

II KINDS of TAPESTRY, called tapestry of the "*high warp*" and tapestry of the "*low warp*." The difference is rather in the manner of working it, than the work itself, which is, in effect, the same in both, only the looms, and consequently the warps, are differently situated; those of the low warp being placed flat, and parallel to the horizon, and those of the high warp being erected perpendicularly.

The art of weaving tapestry was brought into England by William Sheldon, about the end of the reign of Henry VIII.: the invention came originally from the Levant. Some writers have supposed that the English and Flemish, who were the first that excelled in it, might bring the art with them from some of the crusades, or expeditions against the Saracens. Accordingly, they say, that those two nations, who were the first to set on foot this noble and rich manufacture in Europe, which afterwards became one of the finest ornaments of palaces and churches, have at least the honour of being the restorers, if not the inventors, of this curious and admirable art.

In the reign of King James I., the manufacture of tapestry was set up at Mortlake, in Surrey, by Sir Francis Crane. King James himself subscribed two thousand pounds towards the undertaking, and King Charles I. allowed him two thousand pounds a year for ten years.

The first establishment of a tapestry manufactory at Paris was in the reign of Henry IV., in the year 1606; but this fell with the death of that prince. Under Louis XIV., the manufacture was retrieved by the care and address of the great M. Colbert, to whom is owing the establishment of the Gobelins, a royal tapestry manufactory, which has produced works of this kind scarcely inferior to the finest English and Flemish tapestry, either with regard to the design, the colours, or the strength.

The tapestry of the Gobelins is made of pieces of a certain breadth only. There are men called *rentrayeurs*, or fine-drawers, who are employed in sewing or fine-drawing the several parts together, so that no seam is discernible, but the whole appears as one design.

The French have had three considerable tapestry manufactories besides that of the Gobelins; the first at Aubusson, in Auvergne; the second at Felletin, in the upper Marche; and the third at the Beauvois: they were all equally established for the *high and low warp;* but all laid aside the former, except that of the Gobelins.

II DIVISIONS of GEOGRAPHY, called *general* and *special*, or *universal* and *particular*.

Geography *general*, or *universal*, is that which considers the earth in general, without any regard to particular countries, or the affections common to the whole globe; as its figure, magnitude, motion, land, sea, &c. And this may be subdivided into *absolute* geography, which respects the body of the earth itself, its parts and peculiar properties, &c.; *relative*, which accounts for the appearance and accidents owing to celestial causes; and *comparative*, which explains those properties that arise from comparing different parts of the earth together.

Geography, *special* or *particular*, is that which considers the constitution of the several particular regions or countries, their bounds, figure, &c., with the mountains, forests, mines, waters, plants, and animals, &c. therein; as also their climates, seasons, heat, weather, distance from the equator, &c.; and their inhabitants, arts, foods, commodities, customs, language, religion, policy, cities, &c.

Geography is very ancient, at least the special part thereof, for the ancient writers scarcely went beyond the description of countries. Of this kind is the geography we find in the books of Moses, written about the year 1452 B. C., and that of Homer, in his Iliad and Odyssey, who flourished, according to the Arundelian marbles, 907 B. C. The geographical knowledge we derive from Herodotus, who flourished about about 445 years B. C., is very partial and imperfect. It chiefly relates to certain parts of Asia, and divers others unknown, as well as the northern and western parts of Europe, and also Africa, Egypt and Lybia excepted.

It appears that the early geographers, being destitute of mathematical instruments and of astronomical observations, began first to determine the situation of places according to climates; and they were led to fix upon these climates from the form and colour of certain animals which were to be found in those different countries. The appearance of negroes, or of those called by them Ethiopians, and of animals of the larger size, such as the rhinoceros and elephant, suggested to them the line of division, where the limits of the torrid zone began towards the north, and terminated towards the south. This grosser manner of dividing their climates must be considered as the first rude outline of geography, in the more illiterate ages of the world. However this be, the Chaldeans and Egyptians, who were distinguished by their skill in geometry and astronomy, were of course the first persons who paid any particular attention to geography; and it is said that the first map was made by order of Sesostris I., who conquered Egypt.

This Egyptian king, says Eustathius, in his epistle prefixed to his commentary on Dionysius, having traversed great part of the earth, recorded his march in maps, and gave copies of his maps not only to the Egyptians but to the Scythians, to their great astonishment.

The Jews also seem to have had surveyors among them; hence some have imagined that they had made a map of the Holy Land, when they gave the different portions to the nine tribes at Shiloh. And Josephus tells us that when Joshua sent out people from the different tribes to measure the land, he gave them as companions persons well instructed in geometry, whose skill would prevent their deviating from the truth. We may, therefore, reasonably presume, that a geometrical survey was then made of the Holy Land; though we cannot absolutely determine whether their mensuration was only taken down in numbers, or regularly projected and digested into a map.

Besides the method of dividing countries by climates, the Egyptians and Babylonians adopted another, which was that of determining the situation of places, or their distance from the equator, by observing the length of their longest and shortest days. This they performed by means of a gnomon, erected upon a horizontal plan, by which they were enabled to measure the length or shortness of the shadow, in proportion to the height of the gnomon.

From the days of Thales and his immediate successors, who flourished in the sixth century before Christ, geography seems to have received little improvement for 200 years, till the establishment of the famous school of Alexandria.

It was a constant custom among the Romans, after they had conquered and subdued any province, to have a map or painted representation thereof carried in triumph, and exposed to the view of the spectators. Thus the Romans, as they were the conquerors, became the surveyors of the world. Every new war produced a new survey and itinerary of the countries where the scenes of action occurred; so that the materials of geography were accumulated by every additional conquest.

Julius Cæsar ordered a general survey to be made of the whole Roman empire, by a decree of the senate; selecting for this purpose persons well instructed in every branch of philosophy. The three surveyors were Zenodoxus, Theodotus, and Polyclitus, each of whom was appointed to survey a different division of the empire. This survey commenced in the consulship of Julius Cæsar and Marc Antony, in the year 44 B. C., and continued for twenty-five years one month and ten days, to the consulship of Sentius Saturninus and Lucretius Cinna, in the year 19 B. C.

Augustus was a distinguished patron and promoter of this science, under whom Strabo published his geography. The study was greatly encouraged also under Tiberius, Claudius, Vespasian, Domitian, and Adrian.

The ages of barbarism succeeded the fall of the Roman empire, and the arts and sciences were obliged to seek refuge and protection from the Arabians and Orientalists in Asia; the principal of whom, distinguished by their attention to geography, were Almamom, caliph of Babylon, and Abulfeda, a Syrian prince. After the revival of learning in Europe, and particularly during the last two centuries, geography has derived very considerable accessions from travels, voyages, and nautical and astronomical observations.

II ASTRONOMICAL PILLARS of SETH. In what age or country the science of astronomy originated, or by whom it was gradually methodised and improved, is extremely uncertain; but that various nations, at a very remote period, made observations of the most remarkable celestial phenomena, is well known. Josephus in his Antiquities, speaking of the progress that had been made in astronomy by Seth and his posterity before the deluge, asserts that they engraved the principles of the science on two pillars, one of stone, and the other of brick, called the pillars of Seth; and that the former of these was entire in his time. He also ascribes to the antediluvians a knowledge of the astronomical cycle of 600 years, which Montucla thinks, with much greater reason, was an invention of the Chaldeans: indeed, the greater part of authors agree in fixing the origin of astronomy either in Chaldea or in Egypt, both of which nations pretended to a very high antiquity, and equally claimed the honour of producing the first cultivators of this science. The Chaldeans, in particular, boasted of their temple, or prodigiously high tower of Belus, which is thought by some to have been an astronomical observatory, and of their celebrated astronomer and philosopher Zoroaster, whom they placed 500 years before the destruction of Troy; while the Egyptians, with similar ostentation, vaunted of their colleges of priests, which were the depositories of every species of knowledge, and of the monument of Osymandyas, in which it is said there was a golden circle of 365 cubits in circumference, and one cubic thick, divided into

365 equal parts, according to the days of the year, and containing the heliacal risings and settings of the stars for each day.

The Greeks did not begin to cultivate astronomy till a long time after the Egyptians, of whom they were the disciples. Thales the Milesian, and other Greeks, having travelled into Egypt, brought from thence the chief principles of the science.

Among others who cultivated and improved astronomy, may be mentioned the celebrated Archimedes, who constructed a kind of planetarium, or orrery, for representing the principal phenomena of the heavenly bodies. Hipparchus of Bithynia formed the first solar tables of which any mention is made; and, though defective and erroneous, they are a monument of his genius. The successor of this great man was Ptolemy, who was born at Pelusium, in Egypt, in the beginning of the second century of Christianity, and was the first who undertook to reform the whole of this science, by establishing it upon a new foundation. The system he formed is known to be erroneous, but it lasted near 1400 years; and even at this time, though it is entirely destroyed, his Almagest, considered as the depository of ancient observations, is one of the most precious relics of antiquity.

In 1473 was born Nicolaus Copernicus, the celebrated restorer of the old Pythagorean system of the world, which had been set aside ever since the time of Ptolemy. Copernicus was a canon of Frawenberg; in which peaceful retreat, after 36 years of observation and meditation, he established his theory of the motion of the earth, with such new and demonstrative arguments in its favour, that it has gradually prevailed from that time, and is now universally received by the learned throughout Europe.

Tycho Brahe, a Danish astronomer of the 16th century, made numerous important and useful discoveries. He proved, against the opinion that then prevailed, that comets are higher than the moon; and from his observations on this and the rest of the planets, the theories of their motions were afterwards corrected and improved.

During this and the following century many important observations and discoveries were made, and several distinguished astronomers flourished; among whom may be mentioned Kepler, Galileo, Huygens, Hevelius, &c.; but towards the latter part of the 17th and the beginning of the 18th centuries practical astronomy seems to have languished; at the same time the theoretical part was carried to the highest degree of perfection by the immortal Newton, in his "Principia."

Dr. (afterwards Sir William) Herschel may be named as the most distinguished astronomer after Sir Isaac Newton. By this indefatigable observer we are made acquainted with a new primary planet belonging to our system, called the Georgium Sidus, attended by six satellites, which he discovered on the 13th of March, 1781, and which, being at twice the distance of Saturn from the Sun, has doubled the bounds formerly assigned to the solar system. We are also indebted to him for the discovery of two additional satellites to Saturn, of which the number is now seven, and many other important and valuable discoveries.

II BRANCHES of ASTROLOGY, *natural* and *judiciary*. To the former belongs the predicting of natural effects; as the changes of the weather, winds, storms, hurricanes, thunder, floods, &c.

Judiciary or judicial, which is commonly called simple astrology, is that which pretends to foretel moral events; *i.e.* such as have a dependence on the free will and agency of man, as if they were directed by the stars. This art, which owed its origin to the practice of knavery on credulity, and which the celebrated Mr. Briggs denominated a mere system of groundless conceits, is now universally exploded by the intelligent part of mankind. There was a time, however, when this science, frivolous and ridiculous as it may justly be denominated, furnished very powerful incentives to the study of astronomy. Without some knowledge of the motions and aspects of the stars, the astrologers would have been unable to draw their horoscopes, and of course to read the fates of men in the face of the heavens. Accordingly Kepler observes, "that astrology is the foolish daughter of a wise mother, and that for 100 years past this wise mother could not have lived without the help of her foolish daughter;" and he conceived that the study of astronomy had been greatly neglected ever since men ceased to apply themselves to astrology.

It is not easy to trace the origin of this absurd science. Some say it was invented at Chaldea, and from thence transmitted to the Egyptians, Greeks, and Romans; others ascribe it to the Egyptians, and that Cham was the inventor. But it is generally believed that we owe it to the Arabs. The Chaldeans and Egyptians, and, indeed, almost all the nations of antiquity, were infatuated with the chimeras of astrology. Among the Arabians, and in the eastern courts, the truths of science could be recommended only by ignorance and folly; and the astronomer would have been disregarded had he not debased his honesty by the vain predictions of astrology.

At Rome, the people were so infatuated with this art, that the astrologers, or, as they were called, the mathematicians, maintained their ground, in spite of all the edicts of the emperors to expel them from the city.

II KINDS of SEALS used by the pope. The pope has two kinds of seals; the first used in apostolical briefs, private letters, &c., called the fisherman's ring. This is a very large ring, on which is represented St. Peter drawing his net full of fishes.

The other is used in bulls, representing St. Peter's head on the right, and that of St. Paul on the left, with a cross between the two: on the reverse are sometimes the pope's name and arms.

The use of seals is very ancient, an instance of which occurs in Daniel, chap. vi. 17. But seals are still older than this; for Jezebel, in 1 Kings, chap. xxi., seals the orders she sent for Naboth's death with the king's ring.

The ancient seals were all engraven on the collets, stones, &c. of rings; and as the original use of rings was only to be in readiness for the sealing of acts, instruments, &c., seals seem to be as ancient.

Sealing rings were invented by the Lacedemonians, who, not content to shut their chests, armories, &c. with keys, added seals to them; and to this end they first made use of worm-eaten wood, the impressions of which they took on wax, or soft earth; but they afterwards found the art of engraving figures on rings, the impression of which they took in the same manner.

In Moses's time the art of engraving, not only on metals but also on precious stones, was known.

Pliny observes, that in his time there were no seals used any where but in the Roman empire. At Rome they were absolutely necessary, insomuch that the testament was null and void without the testator's seal.

In France, the custom anciently was, instead of signing instruments, to seal them, as appears from an infinity of charters, which are not signed at all; the reason of which was, that in those days very few people could write.

In England, the first sealed charter we find extant is that of Edward the Confessor, upon his founding of Westminster Abbey; yet we read of seals in the MS. history of king Offa. Before the time of William the Conqueror, the English did not seal with wax, but only made a golden cross on the parchment, and sometimes an impression on a piece of lead, which hung to the grant with a silken string.

The office of lord chancellor is, to this day, created by the mere delivery of the king's great seal into his custody, without writ or patent.

II SOLSTICES, called the *æstival* or *summer* solstice, and the *hyemal* or *winter* solstice. The SOLSTICE is the time when the sun is in one of the solstitial points; that is, when he is at his greatest distance from the equator, which is 23° 28′, thus called, because he then appears to stand still, and not change his place in the degrees of the zodiac any way; an appearance owing to the obliquity of our sphere, and to which those who live under the equator are strangers.

The summer solstice is when the sun is in the tropic of Cancer, which is on the 21st of June, when he makes the longest day.

The winter solstice is when he enters the first degree of Capricorn, which is on the 22d of December, when he begins to return towards us, and makes the shortest day.

This is to be understood as in our hemisphere; for in the southern, the sun's entrance into Capricorn makes the summer solstice, and that into Cancer the winter solstice.

II SORTS of MAIL ARMOUR, *chain* mail and *plate* mail.

Chain mail is formed by a number of iron rings, each ring having four others inserted into it; the whole exhibiting a kind of net-work, with circular meshes, every ring separately riveted.

Plate mail consists of a number of small laminæ of metal, commonly iron, laid one over the other, like the scales of a fish, and sewed down to a strong linen or leathern jacket, by thread passing through a small hole in each plate.

The materials anciently used for making armour were exceedingly multifarious, depending, in some instances, upon the produce of the country in which it was fabricated, but more generally upon the judgment or experience of the inhabitants.

Among the more civilised nations, brass, iron, and other metals were preferred; and in the time of Asiatic magnificence, even gold was not spared: on the other hand, the Lybians were clothed in tunics of leather.

The military dress of the ancient Persians was composed of leather, and girt about the body with a leathern girdle. Some of the Asiatic Indians used a species of armour made with wood; others plaited rushes upon each other, like mats, and worked them into the form of a thorax, or breast-plate. Herodotus mentions a people who inhabited the maritime parts to the westward of the Garamantes, who, "when they make war, wear the skins of ostriches instead of armour."

The shield, the helmet, and the breast-plate may claim precedence of every other part of the ancient defensive armour; the first from the obvious use of such an instrument, and the extensiveness of its service; and the other two from the protection they afforded to the sources of life and sensation.

The defensive armour of the Israelites consisted of a shield, a helmet, a military vest, a thorax or breast-plate, and belts of metal to gird upon the body beneath the breast-plate. It does not appear that they wore greaves or military boots for the defence of their legs, though greaves are mentioned as a part of the armour belonging to Goliath, the giant of Gath: they were also worn by other Asiatic nations, and at the siege of Troy by the Grecians in general. Homer frequently distinguishes his countrymen by the epithet of well-greaved or well-booted Grecians.

In the book of Exodus, Moses mentions a garment, which our translators considered a military one, and accordingly have rendered it an *habergeon*, that is, a short coat of mail.

The Egyptian armour of defence for the person consisted of a *brazen helmet* and a *thorax*, or a coat of linen, so plaited and folded as to resist the point of the enemy's weapon: the whole seems to have been formed of rolls of linen or cotton fastened together like the stockings of the Tyrolese.

The Sarmatian cuirass, described by Pausanias, was very similar to our plate mail. "They take," says he, "the hoofs of their horses, which they cleanse and polish, and then cut in little pieces like dragon's scales; which done, they bore the scales, and afterwards sew them with the sinews of an ox or horse. The dragon's scales resemble the divisions of a pine-apple when it is green."

The cuirass covered the body before and behind; it consisted of two parts, a breast and a back-piece of iron, fastened together by means of straps and buckles. To the cuirass was buckled the armour for the shoulders and arms; the first called "pouldrons;" the second "brasarts," or, corruptly in English, "bambraces." At the joint or bending of the arm the bambraces were cut obliquely; the vacancies on the inside, when the arms were straightened, were covered by pieces of mail called "goussets," and afterwards by a contrivance of plates resembling hearts. The hands were defended by "gauntlets," of chain-mail, but more frequently of small plates of iron, riveted together in imitation of the lobster's tail, so as to yield to every motion of the hand.

Mail armour maintained its ground from the invasion to the fifteenth century. Henry IV. is the last of our kings who appears in it on his great seal; though plate armour was introduced here and in France as early as the fourteenth century. Plate armour was divided into pieces similar in form to the mail armour, and the names of the different pieces are nearly alike in both. Plate armour continued in use, with few variations, to the close of the seventeenth century, when the introduction of firelocks, with improvements of artillery, and a more active mode of warfare, superseded the incumbrances of heavy armour. Of all this furniture, scarce any thing is now retained except the cuirass, and that is only partially used.

The changes of our ancient armour may be best traced upon sepulchral monuments.

The application of armour to horses is as ancient as the time of Cyrus. The Sarmatian horses were covered with small plates like the scales of a fish, after the manner of their riders. The investing of horses with defensive armour was common enough in the middle ages, and was, perhaps, introduced into England by the Normans. It continued to the close of the sixteenth century.

II EXTREMITIES of the HOLY LAND. The limits of the Holy Land are often expressed in Scripture by the terms "from Dan to Beer-sheba;" Dan being the northern, and Beer-sheba the southern extremities of the land.

The city of Beer-sheba was given by Joshua to the tribe of Judah, and afterwards transferred to Simeon. It derived its name from the well on which Abraham and Isaac ratified their alliance by an oath with Abimelech. It was distant south from Hebron 20 miles, and had a Roman garrison in the time of Eusebius and Jerome.

Dan became infamous for the calf set up by Jeroboam. When the Romans took this city, they gave it the name of Paneas, and bestowed it on Philip, the son of Herod, who called it Cæsarea Philippi.

II GREAT CAPTIVITIES of the JEWS. These people experienced many captivities; but the most signal were those of Israel and Judah, under the sovereigns of these kingdoms, after they were separated, B. C. 975, denominated the *Assyrian* and *Babylonish.*

The *Assyrian* captivity, which comprehended that of the ten tribes, commenced in the reign of Pekah, king of Israel, B. C. 740, when Tiglath-Pileser, king of Assyria, took several cities of Israel, and carried away captives, principally from the tribes of Reuben, Gad, and the half tribe of Manasseh. In the sixth year of Hezekiah, king of Judah, and ninth of Hoshea, king of Israel, B. C. 721, Shalmaneser, king of Assyria, took and destroyed Samaria, after a siege of three years, transplanted those of the ten tribes that had been spared by his father Tiglath-Pileser to Nineveh and the provinces beyond the Euphrates, and thus dispersed them among the Gentiles. Moreover, in the twenty-second year of Manasseh, king of Judah, B.C. 676, Esarhaddon, or Assardinus, king of Assyria and Babylon, made the last deportation of the Israelites, and planted others in their stead; and in the same expedition, probably, took Manasseh captive, and carried him to Babylon.

The *Babylonish* captivity comprehended that of the kingdom of Judah, or of the two tribes of Judah and Benjamin, who adhered to the house of David, and lasted 70 years.

II BRANCHES of ENAMELLING. By the custom of trade, rather than from any principle of utility, enamelling is divided into two branches, viz. DIAL-PLATE enamelling, and TRANSPARENT enamelling. The former includes the manufacture of watch and clock plates, with fluxed plates for enamel painting; the latter comprehends the enamelling of watch-cases, brooches, pins, and other bijoux: latterly, the making of these lesser articles has grown into disuse in this country.

The art of enamelling is of great antiquity, but of unknown origin. That it was practised by the Egyptians is evident, from the remains that have been observed on the ornamental envelopes of mummies. From them it probably passed to the Greeks, and afterwards to the Romans, who appear to have introduced the art into this country, as various Roman antiquities have been dug up in different parts of Britain in which enamels have formed portions of the ornaments. That the Britons received the art from their conquerors may be conjectured from the circumstance of enamelled trinkets having been found in British barrows. That the Saxons practised it is certain, from the jewel found at Athelney, in Somersetshire, and now preserved at Oxford; which jewel, as appears by the inscription, was made by command of the great Alfred. The gold cup given by King John to the corporation of Lynn, in Norfolk, proves that the art was not lost under the Normans, for the sides of that cup are embellished with various figures, whose garments are partly composed of coloured enamels. The tomb of

Edward the Confessor in Westminster Abbey, constructed in the reign of Henry III., was also ornamented with enamels, pieces of which still remain. The beautiful crozier of the celebrated William of Wykeham, of the time of Edward III., may be also adduced as exhibiting some curious specimens of the applications of this art; and other examples might be pointed out of its progressive descent to our own age.

LES TROIS.

III CLASSES of CANONICAL BOOKS. These are, the Law, the Prophets, and the Psalms; and again, the Historical, Epistolary, and Prophetical, in the New Testament. The historical are the four Gospels and the Acts of the Apostles. The epistolary books are those to which the title of epistle is always prefixed. Of the prophetical class there is only one book, that of the Apocalypse, or Revelation of St. John.

III CREEDS or BELIEFS. These are, the Athanasian, the Nicene, and the Apostles' Creed.

III ARTICLES of the LUTHERAN CHURCH. These are, first, that the Holy Scriptures are the only source whence we are to draw religious sentiments, whether they relate to faith or practice; second, that justification is the effect of faith, exclusive of good works, purely in obedience to God, and not in order to our justification; third, that no man is able to make satisfaction for his own sins.

III DIVISIONS of CHRONOLOGY. These are, ancient, middle, and modern. In the ancient chronology it will be found there were 4000 years from the creation to the redemption of man, and that Noah and his family were miraculously preserved in the ark, 1650 years after Adam's creation. The 2350 years which passed from that time to our Saviour's birth, may be thus divided. There have been four monarchies: the first three are included in ancient chronology.

First, the Assyrian empire, founded by Nimrod 2059, ended under Sardanapalus in 820, endured 1239 years. The Median, though not accounted one of the four great monarchies, being conquests of rebels in the Assyrian empire, comes in here for about 200 years.

Second, the Persian empire, which began under Cyrus, 538, ended in Darius, 331, lasted a little more than 200 years.

Third, the Grecian empire, begun under Alexander the Great, in 336, was soon after his death dismembered by his successors; but the different parcels into which they divided it were possessed by their families until the famous Cleopatra, the last of the race of Ptolemy (one of Alexander's captains), who reigned in Egypt, was conquered by Julius Cæsar about half a century before Christ, which is a term of about 300 years.

Middle chronology contains about 800 years from the birth of our Saviour, and from within 50 years of the rise of the Roman empire, to Charlemagne, who died in 814. He was king of France, and after having subdued the Saxons, repressed the Saracens, and established the temporal dominions of the pope by a grant of considerable territories, was elected Emperor of the West, and protector of the church. The date of this event nearly corresponds with that remarkable period of our English history, the union of the Heptarchy, or seven kingdoms, under Egbert, which took place in 828.

Modern chronology embraces the time from the death of Charlemagne to the present period. Among the most remarkable events may be mentioned the conquest of England by the Normans; the Crusades; the discovery of America by Columbus; the Reformation; and the French Revolution, whence arose that scourge of Europe, Napoleon Buonaparte, who, after subjugating nearly the whole Continent, and sacrificing almost innumerable lives, was himself overtaken by retributive justice, and died a captive on the island of St. Helena.

III PERIODS of MAN'S AGE. When Servius Tullius classed the Roman people, he divided their ages into three periods; childhood to 17, youth to 46, and old age to the end of life.

III PUNIC WARS. The first Punic war, which commenced in the year B. C. 264, arose from the following circumstances. Some Campanian soldiers, who had belonged to the army of Agathocles, were kindly received at Messina, as they were leaving Sicily and embarking for their own country. With atrocious ingratitude and perfidy, they took occasion, in the night, either to expel or assassinate all the men; after which they married their wives, seized their effects, and remained sole masters of that important city, and gave it the name of Mamertina.

In imitation of them, and by their assistance, a Roman legion treated in the same cruel manner the city of Rhegium, which lay directly opposite to Messina on the other side of the strait. These two perfidious cities concurring and mutually supporting each other, became formidable to their neighbours. Messina in particular, being very powerful, gave great umbrage and uneasiness both to the Syracusans and the Carthaginians, who possessed one part of Sicily. The Romans, after the departure of Pyrrhus, determined to punish the revolters at Rhegium; and for this purpose they took the city, killed most of the inhabitants in the attack, and carried about 300, who survived, to Rome, where they were scourged, and publicly beheaded in the forum. By this sanguinary execution the Romans wished to testify to their allies their own innocence and integrity. Rhegium was then restored to its lawful possessors. The Mamertines were thus considerably weakened; and while they were concerting measures for their own safety, they disagreed among themselves, so that one party surrendered the citadel to the Carthaginians, and the other called the Romans to their assistance, and resolved to put them in possession of the city. Thus commenced the first Punic war. Although the Roman senate declined to take part with the Mamertines, the people determined to assist them, and with this view the consul Appius Claudius crossed the strait with his army, and partly by force and partly by stratagem drove the Carthaginians from the citadel, and obtained possession of the city. This was the first expedition that the Romans made out of Italy.

Notwithstanding the different defeats of the Carthaginians, the Romans saw that while they maintained the dominion of the sea it would not be in their power to drive them out of Sicily; they therefore now formed the first design of having a fleet, and of disputing with the Carthaginians the empire of the sea. At this time they had not a single vessel which they could call their own, but they applied themselves with such ardour and industry, that in two months they built 100 five-oared and 20 three-oared gallies; and after some time spent in exercising the rowers, their fleet put to sea under the consul Duilius, and sailed in quest of the enemy. The Romans coming up with the Carthaginians near the coast of Mylæ prepared for an engagement; and availing themselves of a grappling instrument called *corvus*, or crow, they were enabled to board the enemies' ships and come to a close fight. The Carthaginian fleet consisted of 130 sail, under the command of Hannibal. At first the Carthaginians despised their enemies, but when they saw the above-mentioned engines raised on the prow of every one of their ships, and found that they were thrown forcibly into their vessels so as to grapple them in spite of all resistance, they were not a little astonished. Being thus compelled to fight as if they had been on land, they were unable to sustain the attack of the Roman vessels, which produced great slaughter among the Carthaginians, and the loss of 80 vessels. This unexpected victory raised the spirits of the Romans, and extraordinary honours were conferred on Duilius as the first Roman to whom a naval triumph was decreed. After several maritime conflicts, in which the advantage was sometimes on one side and sometimes on the other, the Romans determined to combat the Carthaginians in their own country, and both prepared for a decisive engagement. The Roman fleet consisted of 330 gallies, on board of which were 140,000 men, and the Carthaginian squadron consisted of 350 sail, and about 150,000 men. The battle was conducted on both sides with great skill and valour: the Romans lost 24 gallies, but the Carthaginians, who were entirely defeated, had 30 sunk and 63 taken by the victors. After this action the Carthaginian chief made proposals of peace to the Romans, with a view of diverting them from the African expedition, but the Romans rejected the proposal and sailed for Africa, and with a powerful army landed without opposition at Clypea. Regulus the Roman commander committed great ravages along the sea-coasts, and even penetrated into the heart of the country. Having laid siege to Ades, a fortress of great consequence to Carthage, the Carthaginians advanced to meet him; an encounter ensued, and the Carthaginians were defeated with the loss of 17,000 men and 18 elephants. Regulus after this action burnt all the open places and conquered 73 towns. Utica and Tunis were both obliged to submit, and nothing seemed now to remain but the siege of Carthage itself. To complete the misfortunes of the Carthaginians, the Numedians entered their territories, and committed such dreadful devastations that a famine seemed to be inevitable. The African nations, likewise, more immediately subject to Carthage, being weary of the Carthaginian yoke, joined the Romans. Regulus offered peace, but the terms were so humiliating that the Carthaginians resolved to suffer any extremities rather than submit. At this moment of alarm and danger Xantippus, a Lacedemonian, of great bravery and military skill, with a body of Greek mercenaries, arrived at Carthage. He taught them to form all the evolutions and movements of the military art according to the Lacedemonian manner. The Carthaginians, so instructed and inspirited, thought themselves invincible under Xantippus, and boldly advanced to meet their enemies. Regulus had become vain and confident, and by his misconduct occasioned the total ruin of his army. Xantippus either put to the sword or took prisoners all except 2000 men who broke his right wing, and made their escape to Clypea. In this battle 800 Carthaginians were slain, and on the side of the Romans the number of those who fell in the battle and pursuit amounted to 13,000. Regulus himself with 500 of his men were taken prisoners and carried to Carthage. where all were treated with great humanity except Regulus, who in his prosperity had so insulted the Carthaginians, that he is said to have been confined in a dungeon with sustenance barely sufficient to keep him alive, and a huge elephant, at the sight of which animal he was always greatly terrified, was constantly placed near him. The Romans and Carthaginians fought another great naval and several land battles, generally in favour of the Romans, and in the year B. C. 241 the first Punic war was concluded.

The regret of the Carthaginians, for having so tamely given up Sicily, by the treaty which terminated the first Punic war; the injustice and violence of the Romans, who took advantage of the troubles excited in Africa, to dispossess the Carthaginians of Sardinia and to impose a new tribute on them; and the success and conquests of the latter in Spain, are said to have caused the violation of the treaty, and brought about the *second Punic war*.

In this war, which commenced in the year B. C. 218, the Carthaginians in turn became invaders. Hannibal left his winter-quarters at New Carthage early in the spring, with an army consisting of 100,000 men, of whom 12,000 were horse, and about 40 elephants. In this expedition he met with powerful and frequent opposition, particularly at the passage of the Rhone, where the Gauls had assembled all their forces. Having accomplished this arduous and difficult enterprise, he continued his march through the middle of Gaul, moving northwards, in order to avoid Scipio, and reserve his army till he reached Italy. During his progress through the country of the Allobroges, he was chosen umpire between two brothers who disputed their right to the kingdom. Brancus, the elder brother, having been reinstated by Hannibal in his dominions, furnished his whole army with provisions, clothes, and arms, and escorted him to the foot of the Alps. In the prosecution of his march to the summit of the Alps he encountered many difficulties. The sight of these mountains, which seemed to touch the skies, covered with snow, and exhibiting scarce any thing to the eye but a few tottering cottages scattered on the sharp tops of inaccessible rocks, not a little intimidated his troops. The meagre flocks almost perished with cold, and hairy savages, with fierce aspects, renewed also the terror which the distant prospect of this ridge of mountains had raised, and struck a prodigious damp on the hearts of the soldiery.

Hannibal's whole army was brought to the verge of destruction by the deception practised on him by some Gallic guides, who led him into a deep pass out of which they thought it impossible for him to escape. However, by the wise disposition of his forces, the assistance of his elephants, and the bravery of his infantry, who greatly distinguished themselves, he dispersed the enemy and surmounted every other difficulty, reaching the top of the mountains on the ninth day from his beginning the ascent. It should be observed that Hannibal was in great measure indebted to the elephants for escaping all the disasters the enemy threatened him with; for wherever these huge animals appeared, the Gauls were struck with such terror, that they immediately fled with precipitation. Hannibal halted two days on the summit of the Alps, to refresh his wearied troops, which were greatly dispirited by the snow that had lately fallen. In order to animate them to make another effort with alacrity, from one of the highest hills he gave them a prospect of the fruitful plains watered by the Po; he likewise pointed towards the place where Rome stood, which he assured them a battle or two would make them masters of, and consequently put a glorious period to all their toils. They pursued their march, but the difficulty and danger increased in proportion as they approached nearer the end of the descent: they came at last to a path naturally very steep and craggy, which being rendered impracticable by the late falling of the earth, terminated in a frightful precipice above a thousand feet deep. In short, Hannibal found it would be impossible to accomplish his design without cutting a way in the rock itself, through which his men, horses, and elephants might pass; and this with immense labour he effected. Approaching, therefore, gradually, the Insubrian foot of the Alps, he detached some parties of his horse to forage, there appearing now some spots of pasture where the ground was not covered with snow. In order to open and enlarge the path, large trees were felled and piled round the rock, after which fire was set to them.

At length Hannibal gained the fruitful plains of Insubria, where, in reviewing his army, he found that, in five months and a half's march, he had lost by sickness, desertion, fatigue, and various engagements, 30,000 foot and 3000 horse. The distance Hannibal had marched his army was about a thousand English miles.

Upon Hannibal's arrival in Italy, he marched against the

Taurini, who had refused to enter into alliance with him; and having encamped before Taurinum, the chief city, he carried it in three days, and put all who opposed him to the sword. This so terrified the Gauls, that they surrendered at discretion.

Hannibal pursuing his course, engaged and defeated, several times, Scipio, Sempronius, Flaminius, &c. carrying all before him; till Fabius, a discreet commander, being sent from Rome, gave Hannibal to understand, that the Romans, instructed by their defeats, had chosen a general capable of opposing him.

Fabius being recalled to Rome, left the command of the army to Minucius, his general of horse, with orders to observe the motions of Hannibal, at a proper distance, but on no account to engage him. Minucius, however, disregarded this prudential advice, and being drawn into action by the Carthaginian general, sustained a signal defeat on the plains of Cannæ. *

Whilst Hannibal was making conquests in Italy, the Carthaginian affairs in Spain, in consequence of the defeat of Asdrubal by Scipio, began to wear an unpromising aspect. Scipio took Honosca by storm, and levelled it with the ground, proceeded to New Carthage, laid waste the adjacent territory, and set fire to the suburbs of that city.

After the battle of Cannæ, Hannibal made Capua his winter-quarters. In this city, which was celebrated for its luxury and dissipation, the rough and invincible soldiers of the Carthaginian general were metamorphosed, by pleasure and indolence, into soft minions, never afterwards fit to cope with the Romans in the field. From this period Hannibal's affairs took another turn. Marcellus, first as prætor, and afterwards as consul, contributed very much to this revolution. He harassed Hannibal's army on every occasion, seized upon his quarters, forced him to raise sieges, and even defeated him in several engagements; so that he was called the Sword of Rome, as

---

* In this contest the slaughter was so great, that not less than 40,000 Romans were killed; and as an evidence of the greatness of the victory, Hannibal sent to Carthage three bushels of gold rings that had been taken from nearly 6000 Roman knights slain in the battle.

Some authors say the consuls Terentius and Emilius were in this engagement.

Fabius had before been named its Buckler. But what most affected the Carthaginian general was to see Capua besieged by the Romans. To preserve his reputation among his allies, he flew to its relief, attacked and defeated the Romans in several engagements; but all his measures to this effect were frustrated, and to cause a diversion, he marched his army hastily towards Rome. Fabius and Hannibal having drawn up their armies before the city, were preparing for a decisive battle, of which Rome was to be the recompence: a violent storm obliged them to separate. When they again repeatedly rallied, the same impediment to action occurred, so that Hannibal believing something supernatural in the event, said that "sometimes his own will, and sometimes fortune, would not suffer him to take Rome." At length he retired, and in his march plundered the rich temple of the goddess Feronia.

The defeat of Asdrubal, who was marching to the assistance of his brother Hannibal, completely ruined all the measures, and blasted all the hopes of the Carthaginian, with regard to Italy. The passage of the Alps had given Asdrubal very little trouble; the way having been previously cleared by his brother, and all nations being disposed to receive him. When Asdrubal found he had arrived too late to render his brother any service, he sounded a retreat, and his army began to march in great disorder. Whilst he was preparing to cross the river Metaurus, the army of the enemy came up with him, and in this extremity it was impossible to avoid an engagement. The battle that ensued was long and obstinate, and Asdrubal distinguished himself by his self-possession and valour. At length, when victory was declared for the Romans, being unable to survive the loss of so many thousand men, who had quitted their country to follow his fortune, he rushed at once into the middle of a Roman cohort, and there died in a manner worthy of the son of Hamilcar, and brother of Hannibal. This was the most bloody battle that the Carthaginians had fought during this war, and may be looked upon as a reprisal for the battle of Cannæ. The Carthaginians lost 55,000 men, and 6000 were taken prisioners. The Romans, whose loss was 8000, were so weary of killing, that some person telling Livius that he might very easily cut to pieces a body of the enemy who were flying, replied, "It is fit that some should survive, to carry the news of this defeat to the Carthaginians." The head of Asdrubal being thrown into Hannibal's camp informed him of his brother's fate; and perceiving by this cruel stroke the fortune of his country, said, "It is done: I shall no longer send triumphant messages to Carthage: in losing Asdrubal, I have lost, at once, all my hopes, and all my good fortune." He retired with his army to the extremity of the country of the Brutians, and afterwards found it very difficult to subsist, no provisions being sent to them from Carthage,

Hannibal received orders to return home, and, turning his eyes wishfully to Italy, accused the gods and men of his misfortunes, and called down a thousand curses upon himself, for not having marched his soldiers directly to Rome after the battle of Cannæ, whilst they were still reeking with the blood of its citizens.

Scipio, at the head of an immense army, crossed over to Africa, and made that country the seat of war, defeating the Carthaginians every where, and devastating their country. Hannibal, on his return, turned his thoughts to peace, and flattered himself, that being at the head of a powerful army, and the fate of arms still appearing uncertain, he would be able to obtain an honourable one. He, therefore, solicited an interview with Scipio, which was agreed to, and they met; but it proving ineffectual, they separated, with a resolution to decide the fate of Carthage by a general battle, which was fought on the plains of Zama, about five days' march from Carthage, in the year B. C. 202. The Carthaginians, after a very long, obstinate fight, were obliged to fly, leaving 20,000 men on the field of battle, and the like number of prisoners were taken by the Romans. Hannibal escaped in the tumult, and entering Carthage owned that he was irrevocably defeated, and that the citizens had no alternative but to accept peace on any terms. Accordingly a peace, terminating the *second Punic war*, was concluded between the Romans and the Carthaginians, upon the following conditions dictated by Scipio: "That the Carthaginians should continue free, and preserve their laws, their territories, and the cities they possessed in Africa before the war; that they should deliver up to the Romans all deserters, slaves, and captives, belonging to them; all their ships except ten triremes; all their tame elephants, and that they should not train up any more for war; that they should not make war out of Africa, nor even in that country, without first obtaining leave for that purpose from the Roman people; that they should restore to Masinissa all they had dispossessed either him or his ancestors of; that they should furnish money and corn to the Roman auxiliaries; that they should pay to the Romans 10,000 Euboic talents of silver (£1,750,000) in fifty annual payments, and give 100 hostages, who should be nominated by Scipio.

The article which required the Carthaginians to restore to Masinissa all he possessed before the war soon led them into another dispute. Syphax and Masinissa were both kings in Numidia, but occupied different parts of that country. The subjects of the former were called Masæsuli: those of the latter, Massyli, but the name of Numidians was common to both. Their principal strength consisted in their cavalry; and they always rode without saddles, and some even without bridles. A contest having occurred between these two princes, in the progress of which Syphax was defeated and captured, the dominions of this prince were bestoweed upon Masinissa, and the Carthaginians were obliged to restore all he possessed before. Masinissa had likewise seized part of a fertile territory, situated towards the sea-side, near the lesser Syrtis, which had been accustomed to pay tribute to the Carthaginians. Appeals were made to Rome, but the contest remained undecided, though it was evident the Roman senate favoured Masinissa. In the course of time the Carthaginians farther remonstrated against the encroachments of the Numidian prince, and complained to the senate, that besides the land at first contested he had dispossessed them of upwards of seventy towns and castles. They also stated that they were restricted from seeking address by the above-mentioned article of the last treaty. While the Romans returned assurances, apparently impartial, they secretly encouraged Masinissa: a deputation was sent from Rome to settle the dispute, and Cato was one of the commissioners. The deputies having visited Carthage, expressed their astonishment, that after the calamities it had sustained it should again have risen so soon to such a pitch of grandeur. When the members of the senate received this intelligence from their deputies, they declared, that Rome could never be in safety so long as Carthage should subsist. From this time, whatever affair was debated in the senate, Cato always added the following words to his opinion: "I conclude, that Carthage ought to be destroyed." At this time divisions broke out in Carthage: forty citizens were sent into banishment, and the exiles withdrew to the court of Masinissa, who sent his sons to Carthage. But the gates of the city were shut against them, and one of them was pursued by Hamilcar, one of the generals of the republic: this gave occasion to a new war: armies were levied on both sides; and a battle was fought in the presence of the younger Scipio, in which the Carthaginians were vanquished. Reduced to the greatest extremity by famine and the plague, the Carthaginians surrendered to Masinissa, promising to deliver up the deserters, to pay him 5000 talents of silver in fifty years, and to restore the exiles notwithstanding the oaths by which they had bound themselves to the contrary. They all submitted to the ignominious ceremony of passing under the yoke, which was a kind of gallows made by two forked sticks standing upright, with a spear laid across, under which vanquished enemies were obliged to pass; and of 58,000 men, very few returned to Carthage.

Thus humbled and distressed, the Carthaginians renewed their application to Rome, but their deputies returned without satisfaction. At Rome disputes arose between Cato and Scipio Nasica, with respect to the measures which were proper to be pursued. Cato delivered a speech, in which he descanted on the powerful and prosperous state of Carthage; and throwing down some African figs, which the senators admired for their size and beauty, said, "Know that it is but three days since these figs were gathered, such is the distance between the enemy and us." Nasica, on the contrary, was of opinion, that the Carthaginians were too weak to subdue the Romans, and too powerful to be viewed in a contemptible light. The senate, however, resolved to declare war against the Carthaginians, committing the conduct of it to the two consuls, Manilius and L. Marcius Censorinus, and giving them secret orders not to end the war but in the destruction of Carthage. To them was committed a considerable fleet, on board of which were 80,000 foot and about 4000 horse. Thus

[illegible]

,
e
a
o
ld
ll-
all
nd
er,
em-
vife,
or a
mple
the
ience
rt of
lving
lown
life,
om

on one side, and Manilius on the other. Scipio, afterwards surnamed Africanus, was then a tribune in the army, and distinguished himself above the rest of the officers, by his prudence and bravery. The besieged, though thus powerfully assailed, were recovering their spirits in consequence of some advantages which they had gained. Their troops increased, and they obtained an accession of allies. This news occasioned some uneasiness at Rome, but the fame of Scipio had also arrived in the city; and when he appeared in the assembly as a candidate for the ædileship, a general persuasion prevailed, that he was designed by the gods to end the third Punic war, as the first Scipio, his grandfather by adoption, had terminated the second. Instead, therefore, of granting him the ædileship, for which he was a candidate, they for once disregarded the laws, and conferred upon him the consulship, assigning him Africa for his province. As soon as Scipio had completed his recruits, he set out for Utica, and on his arrival revived the spirits of the soldiers. Having ordered his troops to provide themselves with axes, levers, and scaling ladders, he led them, in the dead of the night, and without the least noise, to a district of the city called Megara, the gates of which they broke down. Scipio entered it immediately after, and drove the enemy out of that post; who, terrified at this unapprehended assault, and imagining that the whole city was taken, fled into the citadel, whither they were followed even by those forces that were encamped without the city, who abandoned their camp to the Romans, and thought it necessary to fly into a place of security. At day-break Asdrubal perceiving the ignominious defeat of his troops, in order to be revenged of the Romans, and at the same time to deprive the inhabitants of all hopes of accommodation and pardon, brought all the Roman prisoners on the walls in the sight of the whole army. There he put them to the most exquisite tortures, putting out their eyes, cutting off their noses, ears, and fingers; tearing their skin with iron rakes or harrows, and throwing them headlong from the top of the battlements. This inhuman treatment filled the Carthaginians with horror; however he did not spare even them, but murdered many senators who had been so brave as to oppose his tyranny. Scipio burnt the camp which had been abandoned, and built a new one for his troops. He cut off all provisions from the besieged, thus producing a famine, which soon raged through the city. He then terminated his campaign; but during the winter-quarters he endeavoured to overpower the enemy's troops without the city, and in one action cut to pieces about 70,000 of them, soldiers and peasants. Early in the spring, Scipio attacked at the same time the harbour called Cothon and the citadel. In the progress of this business a dreadful slaughter took place for six days, but on the seventh day, when it was expected the siege would have continued much longer, there appeared a company of men, in a suppliant posture and habit, who desired no other condition but that the Romans would please to spare the lives of all those who should be willing to leave the citadel. The request was granted to all except the deserters; and accordingly 50,000 men and women came out. The deserters, about 900 in number, finding that they had no quarter to expect, fortified themselves in the temple of Æsculapius, with Asdrubal, his wife, and two children, where they might have held out for a long time, though the number was small, as the temple stood on a very high eminence of rocks, to which the ascent was by 60 steps. But at length their patience was exhausted, and they abandoned the lower part of the temple, and retired to the uppermost story, resolving not to quit it but with their lives. Asdrubal came down privately to Scipio, and being desirous of saving his life, threw himself at the feet of the Roman general, by whom he was exhibited to the deserters, who, transported with rage at the sight, poured out their imprecations against him, and set fire to the temple. Whilst it was lighting, Asdrubal's wife, dressing herself as splendidly as possible, and placing herself, with her two children in sight of Scipio, addressed him with a loud voice:—"I call not down curses upon thy head, O Roman, for thou only takest the privileges allowed thee by the laws of war; but may the gods of Carthage, and thou in concert with them, punish, according to his deserts, the false wretch who has betrayed his country, his gods, his wife, his children!" Then addressing herself to Asdrubal, "Perfidious wretch! thou basest of creatures! this fire will presently consume both me and my children; but as to thee, (too shameful general of Carthage,) go, adorn the gay triumph of thy conqueror, suffer in the sight of all Rome the tortures thou deservest!" When she had pronounced these words, she seized her children, cut their throats, threw them into the flames, and afterwards rushed into them herself, in which she was imitated by all the deserters.

After the capture of Carthage Scipio gave the plunder of it (the treasures of the temples excepted) to his soldiers for some days. When the spoils of Carthage were exposed for sale, he expressly prohibited, under the severest penalties, his own family from taking or buying any of them, thus preventing a suspicion of avarice from being attached to himself. When the news of the fall of the city arrived at Rome, the senators sent out ten commissioners to Africa, whose first care was to demolish every remnant of Carthage; and they also issued orders, that it should never again be inhabited, and denounced dreadful imprecations against those, who, contrary to these orders, should attempt to rebuild any parts of it, especially those called Byrsa and Megara.

Such was the termination of the third Punic war, and such was the final catastrophe of the Carthaginian state, in the year B. C. 146, after it had been a nation 737 years.

The first war lasted 24 years; the second, 17 years; the third, 4 years; embracing a period of 118 years.

III ROMAN GLUTTONS, named APICIUS. The first lived under Sylla, the second under Augustus and Tiberius, and the third under Trajan. The second is the most distinguished personage of the three: he kept a kind of school for gluttony at Rome, and spent two millions and a half in entertainments (Pliny describes him as the deepest whirlpool of all the spendthrifts); when, finding himself very much in debt, he was forced at length to look into the state of his affairs, and seeing that he had but 250,000 livres left, he poisoned himself from an apprehension of being starved with such a sum. This man wrote a treatise, De Re Culinaria.

III KINGS of the line of LANCASTER. Henry IV. V. and VI.

III KINGS of the line of YORK. Edward IV. V. and Richard III.

III KINGS, The, of England, who reigned upwards of fifty years, were Henry III. (56 years); Edward III. (50 years and 4 months); George III. (59 years and three months.)

III DEGREES or Classes of HERALDS, viz. Kings, Heralds, and Pursuivants of Arms.

There are three kings of arms, Garter, Clarenceux, and Norroy; six heralds, Windsor, Chester, Lancaster, Somerset, York, and Richmond; four pursuivants, Portcullis, Rouge Dragon, Blue Mantle, and Rouge Croix.

The origin of herald is very ancient: Stentor is represented by Homer as the herald of the Greeks, who had a voice louder than 50 men together.

The Romans had a college of heralds appointed to decide whether a war were just or unjust, and to prevent its coming to open hostilities till all means had been attempted for deciding the differences in a pacific way.

Our kings anciently not only created heralds with their own hands, and with magnificent and expressive rites, in the most public manner, and on the most solemn festivals, christening them by pouring wine on their heads from a gold cup, giving them their herald's name, which is now done by the Earl Marshal; but, in order that they might bear some external and conspicuous tokens of their rank and character, invested them agreeably to the practice of other princes, with the royal military habit, or surcoats of the sovereign's arms, the known symbols of authority and honour; and commanded them to wear such surcoats as ensigns of their office, when they were in the execution of any branch of their duty. Their persons being thus habited and distinguished, were kept sacred and inviolable: they passed with safety through foreign dominions, unmolested even by enemies in times of war, in the field, or in the hour of battle; on the contrary, they were permitted free access to those princes with whom their sovereign was at variance, and were dismissed by them with safe-conduct to the dominions of the king their master.

The modern heralds have lost a good deal of the distinction and office of the ancient ones. And in the army drums and trumpets have succeeded to the functions of heralds, being sent by the general on the same errands, and on that account enjoying the same privileges. Their persons are under the protection of the law of nations, when they bear the marks of their offices publicly, *i. e.* the trumpeter his trumpet, and the drummer his drum; in the same manner as the herald his coat.

III DISTRICTS of ARABIA. Arabia is composed of three districts, the Stony, the Desert, and the Happy. The first was anciently the habitation of the Idumeans, the Moabites, and the Midianites, the Amalekites, and of the Israelites for 40 years. Arabia the Happy was inhabited by the Sabeans. Its fertility attracted the attention of Alexander the Great, who conquered it. The Arabians were, since his death, governed by their particular princes. Their king, Aretas, was defeated by Pompey 63 years B.C., but the country was not entirely subdued till Trajan's reign, when Palma, governor of Syria, completely conquered the country, and substituted the Roman laws in room of those of the barbarous inhabitants. The Arabians tried often to shake off the Roman yoke, but never accomplished it till 625, when Mahomet stirred them up to revolt, and established his religious doctrines. After the death of Mahomet, Abubekr, who governed in his room, took the title of Caliph or Lieutenant, and this title continued to be taken by his successors, chiefs of the religion, and the state. The caliphs united in their persons the rights of the sword and of the altar: all other Mahometan sovereigns held of them as vassals; in short, every thing among the sectaries of the Alcoran bended before them. Insensibly, however, this enormous power was reduced to matters belonging to religion only, and the caliphat became little more than a vain title.

III VOYAGES of CAPTAIN COOK round the WORLD. The first was made in the Endeavour. He sailed from Plymouth on the 26th of August, 1768, accompanied by Joseph Banks, Esq. and Dr. Solander. They made no discovery till they got within the tropics, where they fell in with Lagoon Island, two groups, Bird Island, and Chain Island; and they arrived at Otaheite on the 13th of April, 1769. On the 4th of June, the whole passage of the planet Venus over the sun's disc was observed by them with great advantage. After his departure from Otaheite, Capt. Cook discovered and visited the Society Islands, and Oheteroa, and returned to England on the 12th of June, 1771.

The second voyage was made in the Resolution, accompanied by the Adventure (commanded by Captain Tobias Furneaux). They sailed from Plymouth Sound, 13th July, 1772, arrived at Otaheite in September, 1773, and in August discovered Harvey's Island. In March, 1774, he discovered four islands, which he named Palliser's Islands: he afterwards discovered New Caledonia. In this voyage he discovered a large dreary island, to which he gave the name of South Georgia: various capes and elevated snow-clad coasts, to the most southern part of which he gave the name of the Southern Thule, as being the nearest land to that pole which has yet been discovered. In February he discovered Sandwich Land, and several islands covered with snow. He returned to England, July 30th, 1775.

The third voyage was performed in the Resolution, Captain Cook, and the Discovery, Captain Clerke, in the years 1776, 1777, 1778, and 1779, in search of a north-west passage between the continents of Asia and America. On this voyage they discovered King George's Sound, now called Nootka Sound, which is situated on the north-west coast of America, and Sandwich Sound. On their return, Captain Cook was killed in an affray with the natives on the island of Owhyhee, one of the Sandwhich Isles, on the 14th February, 1779, not so much by his own rashness as through the inadvertence and neglect of his own people. After the death of Captain Cook, the command devolved on Captain Clerke, who died at sea on his return to the southward, August 22d, 1779. The two ships returned to England, and anchored at the Nore, October 5th, 1780.

III TROPICAL WINDS, The, are, first, the general trade-winds, which extend to nearly 30 degrees of latitude on each side of the equator, in the Atlantic, Ethiopic, and Pacific Seas.

Second, the monsoons, or shifting trade-winds, which blow six months in one direction, and six months in the opposite. These are mostly in the Indian or Eastern Ocean. Their change is at the vernal and autumnal equinoxes, and is generally accompanied with terrible storms.

Third, the sea and land breezes, which are another kind of periodical winds, that blow from the land from midnight to noon; and from the sea from about noon to midnight.

III KINGDOMS of NATURE. 1st, Animal, organized, living, self-moving.

2d. Vegetable, organized, living without sense, or self-motion.

3d. Fossil, without life, sense, or motion.

III DISTINCTIONS of the FISH kind. Pennant describes fishes under three grand divisions; cetaceous, cartilaginous, and spinous. Cetaceous, as the whale, dolphin, &c. cartilaginous, as the shark, sturgeon, &c. Cartilaginous fish have gristle instead of bones, always soft and yielding. Age, which hardens the bones of other animals, rather contributes to soften these still more. The spinous or bony kind. The latter, which is by far the most numerous, he subdivides into four sections, viz. the *apodal*, *thoracic*, *jugular*, and *abdominal*.

III CLASSES of SHELLS. First, univalve, or turbinated, which consists of one piece, like the SNAIL. Second, bivalve, consisting of two pieces, like the OYSTER. Third, multivalve, consisting of three or more pieces, like the ACORN shell, which has not less than twelve pieces.

III KINDS of CARNIVOROUS ANIMALS. The *dog* kind, the *cat* kind, and the *weasel* kind.

Carnivorous animals are usually cruel and treacherous in their dispositions; they are even unsocial with respect to their own species; hence it is that their numbers are so few in comparison to that of the graminivorous kind, If it were not for this wise ordinance of nature, the defenceless animals would soon be devoured, and the carnivorous would become the prey of each other.

The senses of *vision* and *smell* are particularly acute in the carnivorous tribes, as it is by means of these that they discover or seek out their prey.

It is a dispute among naturalists, whether or not man be naturally carnivorous. Some contend that the fruits of the earth were intended as his sole food; and that it was necessity in some places, and luxury in others, that first prompted him to feed upon his fellow-animals. Pythagoras and his followers looked on it as a great impiety, and strictly abstained from flesh, from the notion of a metempsychosis *; and their successors, the Brahmins, continue the same to this day.

III SONS OF NOAH. Shem, Ham, and Japheth, among whom Noah divided the earth.

III METAMORPHOSES of INSECTS. All winged insects undergo three metamorphoses or changes of form. The insect first appears in the form of a worm or caterpillar. Its body is long, cylindrical, and consists of a succession of rings, which are generally cased within each other. By the aid of its rings, or of several pairs of legs, it crawls about in quest of food, and in some species its movements are remarkably quick.

In the second period, the insect appears under the form of a *nymph* or *chrysalis*. When, after throwing off the skin of the caterpillar, it exhibits all its external parts, only covered with soft or transparent membranes, it is called a Nymph; but when to these membranes is added a common and crustaceous covering, it receives the name of Chrysalis. While in this second state, insects are generally inactive, and seem not to possess any powers of life.

In the third period, as a butterfly or moth, the insect has acquired its perfect construction. All its members, formerly soft, inactive, and folded up, are now expanded.

---

* A transmigration of soul from one body to another at death.

III GREATEST POETS, The, that ever lived, are Homer, Virgil, and Milton.

> " Three poets in three distant ages born,
> Greece, Italy, and England did adorn.
> The first, in majesty of thought surpass'd,
> The next, in gracefulness: in both, the last.
> The force of nature could no further go,
> To make the third, she joined the other two."
>
> DRYDEN.

III CURIATII. Three brothers selected by the Alban general as champions for a contest with three other brothers, named Horatii, chosen by Tullus Hostilius, king of Rome, in order to decide the difference subsisting between Alba and Rome, A. U. C. 87, B. C. 667. On an interview between the two commanders of the hostile armies, the Alban general declining to terminate the dispute by a single combat with Tullus Hostilius, according to the proposal of the latter, suggested that three champions should be chosen out of each camp, for determining the quarrel. As soon as the agreement was known in the two armies, it excited a strong emulation among the young warriors for the honour of being chosen to this important combat. During the intermediate suspense, Fuffetius cast his eyes upon three Albans, of the circumstances of whose birth Dionysius Halicarnassensis (lib. iii.) has given the following account:—Sequimus, an illustrious citizen of Alba, had two daughters, one married to Curiatius, a citizen of Alba, and the other to Horatius, a citizen of Rome. These two sisters were brought to bed on the same day, each of three male children, who were at this interesting period in the flower of their age, and remarkable for their strength and dexterity. The Alban general having fixed on the three Curiatii, the king of Rome having his attention directed to the three Horatii, proposed the matter to them, who consulted their father on the occasion. The father dreading the event, and apprised of the betrothment of one of his daughters to one of the Curiatii, hesitated for some time in complying with the wishes of his sons; but the love of his country ultimately prevailing over every other consideration, he left his sons to their own choice. When he was informed, that, in imitation of the Curiatii, they preferred a glorious death, or an important victory, to an inglorious life, he lifted up his eyes to heaven, and, embracing his children, exclaimed, "I am a happy father!" and then commanded them to announce to the king his consent.

The combat with the Horatii and Curiatii being proclaimed in both camps, Tullus led the former, and Fuffetius the latter, whilst the people strewed the way as they passed with flowers, and put wreaths on their heads; for they were considered as victims, who had voluntarily devoted themselves for their country. A plain lying between the two camps was the place chosen for the combat; and the two kings advanced with their champions and feciales to the middle, where, before the combat began, they concluded a treaty, which served as a pattern for most of the treaties that were ever after made by the Romans. When this solemnity was finished the champions advanced with a slow pace towards each other, and before they commenced the hostile attack they embraced each other, with all the expression of the most tender and sincere friendship. The spectators shed tears at the sight, and muttered complaints against the kings for causing such affectionate relations to shed the blood of one another. The tenderness of the young heroes, however, did not abate their courage; each of them resumed his arms, and selected his adversary. The combat then began with great impetuosity; the noise of their arms was heard at a great distance, and the air resounded with a confused mixture of shouts and acclamations from both camps, as either of the combatants appeared to have the advantage. The victory was long held in suspense by the skill and valour of the combatants. At length the eldest of the Horatii received a mortal wound, and fell. At this sight the Albans triumphed, and the Romans were thrown into great consternation, which was soon followed with despair, when they saw the second Horatius, pierced through by another of the Curiatii, expire on the body of his brother. However, the three Alban brothers were wounded, and the surviving Horatius appeared unhurt and vigorous. Thinking he was an unequal match for the three brothers together, he had recourse to a stratagem, and retreated, as if he fled: upon this the Curiatii pursued him at different distances, as their respective strength allowed. Horatius perceiving the success of his stratagem, and that they were separated from each other, hastily returned, and slew them singly, before one could advance to the assistance of the other; and, elated with his victory, seized the spoils of the vanquished. — The Roman camp, in the meanwhile, resounding with joyful acclamations, in honour of their hero. Thus Rome gained the superiority over Alba, its mother-city, which Fuffetius acknowledged on the field of battle, saluting Tullus as his sovereign, and asking him what were his commands. Tullus replied, "I command you to keep the Alban youth in readiness, to march at my orders, in case I make war with the Veintes."

III GRACES, The, daughters of Jupiter, attendants upon Venus and the Muses, named AGLAIA, THALIA, and EUPHROSYNE.

III FATES. Daughters of Nox and Erebus: they were called CLOTHOS, LACHESIS, and ATROPOS. One holds the distaff, another drawing from it a thread, signifying the life of man, and the third holding a pair of shears, ready to cut the thread whenever she may choose.

III FURIES. Daughters of Nox and Achéron, named ALECTO, MEGÆRA, and TISIPHONE. They were the most deformed and horrible of all the deities. Instead of hair they had snakes hanging from their heads. They carried chains, and whips with lashes of iron, in one hand, and lighted torches in the other.

III GORGONS, The, were named EURYALE, MEDUSA, and STHENO.

III DEGREES of COMPARISON. By comparison is meant the altering the quality into more or less, or making the different degrees of it; properly speaking, there are but two, the positive, being the original state of the adjective, or primitive word, as *strong*, *wise*, *happy*. *Ex.* Strong; comparative, stronger; superlative, strongest.

III GENDERS. Masculine, feminine, and neuter. *Ex.* Masculine, *father*, *son*, &c.; and the following, when personified, the *sun*, *time*, *death*, *sleep*, *love*. Feminine, *mother*, a *girl*, *virtue*, *vice*, the *soul*, the *earth*, the *moon*, the *church*, *religion*, *nature*, a *gun*, a *ship*, a *vessel*, *fortune*, and the names of countries and cities, are also considered feminine; nouns of the neuter gender have no sex at all, as, a *house*, a *garden*, &c.

Some nouns are common to both sexes, which are called epicines, as *sparrow*, *servant*, *cat*, and are preceded by other words to express their gender. *Ex.* *Cock* or *hen sparrow*, *man* or *maid servant*, *he* or *she cat*.

III CASES of NOUNS. Nouns have three cases, the nominative, the possessive, and the objective. A noun is said to be in the nominative case when it is the subject of a sentence, as, the *girl* reads well.

The possessive case asserts the possession of some property or quality; and the noun in this case has an inflection, which generally end in s, and an apostrophe; as, *William*'s book, *Edward*'s industry.

Nouns are in the objective case when they follow prepositions, or verbs active; as, *William* beats *Edward*.

III SORTS of VERBS, The, are active, passive, and neuter.

An active verb denotes the doing of an action, and therefore supposes an agent or person who acts, and an object acted upon. *Ex.* *I* esteem *the diligent*. *I*, is the agent, *the diligent* is the object. A verb active is also called transitive, because the action passes over the object, and answers to the question who; as, "Alexander conquered the Persians."

A verb passive denotes the impression that persons receive when acted upon; as, *I am taught*, *it is painted*. It necessarily supposes an object upon which the impression is made; as, *the picture was painted by Rubens*.

A verb neuter denotes existing, or being in some posture or situation; as, *I am*, *I sit*, *I weep*; it is also called intransitive, because it has a complete signification in itself, and requires no noun with it to particularise the subject; as, to *sleep*, to *laugh*.

III SORTS of WORDS. Primitive, the root whence others are derived, as *house;* derivative, that is produced from or by others, as *house-hold;* compound, as formed from two or more, as *horse-man-ship.*

III SORTS of SYLLOGISMS. Hypothetical, categorical, and disjunctive.

III PREPOSITIONS contained in a syllogism, major, minor, and consequence.

III LANGUAGES derived from the Celtic, viz. the Erse or Gaelic, the Welsh, and the Irish.

III SORTS of SIGNALS. All signals may be divided into three classes, viz. those which are made by the sound of instruments, as the trumpet, horn, &c. to which may be added striking the bell, or beating the drum; those which are made by displaying pendants and flags of different colours, or by lowering or altering the position of the sails; and those which are executed by rockets of different kinds; by firing cannon or small arms; by artificial fire-works, and by lanterns.

Signals have been in use in all ages. The ancients, who had no regular couriers or posts, made use of them to convey intelligence of what passed at a distance; for which purpose they placed sentinels on eminences, from space to space, who lighted fires in the night-time; mention of which is made by Homer in his Iliad.

In the Agamemnon of Æschylus, that prince, at his departure for Troy, promises Clytemnestra, that the very day the city should be taken he would apprise her of his victory by lighting fires. He keeps his word, and tidings are brought to the princess that Troy is taken, and that Agamemnon's signals are seen.

III SIBYLS. Virgin prophetesses, or maids, supposed to be divinely inspired, and who gave oracles, and foretold things to come.

Authors disagree as to the number of sibyls, but their existence is allowed as established by antiquity: the most celebrated of them were the Erythræan, the Delphic, and the Cumæan.

The Sibylline oracles were held in great veneration among the credulous of the ancients; the books in which they were written were kept by the Romans with infinite care, and nothing of moment was undertaken without consulting them.

Tarquin first committed them to the custody of two patrician priests, instituted for that purpose.

III ORDEALS. The trial by ordeal was of three sorts; viz. ordeal by fire, by hot water, and by cold water. This barbarous manner of discovering the innocence or guilt of accused persons was practised in England in the time of Edward the Confessor, and since as late as the reigns of King John and King Henry III.

The fire ordeal was by taking up in the hand a piece of red-hot iron, of one, two, or three pounds weight, or by walking, barefoot and blindfold, over nine red-hot ploughshares, laid lengthwise at equal distances; and if the party escaped without injury, he was adjudged innocent; but if it happened otherwise, he was condemned as guilty.

The hot water ordeal was by plunging the naked hand and arm into a pot of boiling water, and snatching from the bottom a stone. The arm was then wrapped in linen cloths, and put into a bag, which was sealed by the judge, in the presence of the spectators. At the end of three days the bag was opened, and the bandages taken off: if any marks of scalding then appeared, the prisoner was found guilty; if no such marks appeared, he was acquitted.

In the cold water ordeal, the accused was stripped naked, his hands and legs made fast, and a rope tied about his middle, with a knot upon it at the distance of a yard and a half from his body, and thrown into the pool. If he floated, he was taken out and declared guilty; if he sunk so deep as to carry the knot of the rope under water, he was declared innocent.

Many traditional relics of this water ordeal to discover witches, by casting them into a pool, and drowning them to prove their innocence, are to be traced. Even so late as Charles I., a wretch, named Matthew Hopkins, called the "witch-finder," drowned many unfortunate old women, by throwing them into the water to ascertain if they were possessed of witchcraft.

III FINE ARTS. The three "Fine Arts" are PAINTING, SCULPTURE, and ARCHITECTURE.

PAINTING.

The theory and practice of this ingenious and delightful art are divided by its professors into five principal parts; viz. *invention*, or the power of conceiving the materials proper to be introduced into a picture; *composition*, that of arranging those materials; *design*, that of delineating them; *chiaro-scuro*, or the arrangement and management of the lights and shades, and of light and dark colours; and *colouring*, the name of which sufficiently designates its end.

The reign of Ninus and Semiramis, king and queen of Assyria, about 2000 years before the commencement of the Christian era, is the earliest period to which the actual existence of painting can be traced. Diodorus mentions painting being known about the same time in Egypt. From Egypt it is supposed to have travelled into Greece, where a more genial culture awaited it; where it had not to struggle with such impediments as arose from the government and habits of the Egyptians; and where alone, in the early part of the world, it was found to have been fully brought into action. In other countries, where any trace of it is visible, wrought before the Greeks had exhibited their powers, the best examples are little better than hieroglyphics.

The earliest traceable and satisfactory account of the art being practised in Rome is in the year 450 of the city, or 303 B. C., when Fabius, a noble patrician, painted the temple of SALUS, and he and his family thence obtained the surname of Pictor.

Pliny mentions no other painter till, after the lapse of 150 years, Pacuvius the poet amused his declining years with painting the temple of Hercules, in the Forum Boarium. The Romans were too much occupied with schemes of aggrandisement and military fame to devote much attention to the arts; and it was not till the time of the emperors that they experienced any thing like encouragement in Italy.

A grand epoch of the establishment of painting took place at Florence in 1350, when the Academy of St. Luke was founded in that city; an institution whence arose a great display of talent, increasing in worth, till at length, nearly 150 years after its foundation, it gave to the world three of the greatest luminaries in art it had ever known, Leonardo da Vinci, Michael Angelo Buonarotti, and Raphael.

About the beginning of the century in which Leonardo was born, the use of oil was adopted as a vehicle for painting, and afforded the means of extensive improvement, particularly in colour and effect. Distemper, or colours mixed with sise and water, &c. appears to have been the first practice; and afterwards fresco, as more durable, and better adapted to larger purposes. The discovery of this very essential advantage to the art of painting is attributed to John Van Eyck, of Brussels. Though many doubt the accuracy of this opinion, yet one thing remains clear, that till after the time in which he lived, oil, as a vehicle for colour, was not in general use. No doubt can remain, that, if he did not actually first apply it to the purpose of his art, at least he first used it effectually; his application of it would not otherwise have made, as Vanmander says, as much noise in the world as the discovery of gunpowder by Bertoldo Schwartz had done a century before.

Painting, according to Vanmander, the historian of the Flemish artists, had been carried into Flanders, about the time of Giotti, by some Flemings who went to Italy for the express purpose of learning it; and he says, that "the mode of painting brought from Italy was with gum and eggs, having been so practised at Florence at its first commencement by Cimabue." It spread in practice among the Germans about the same time, and each of these countries established a mode or style for itself. But it was in Italy alone that any true perception of what was the proper object of art appears to have been felt, and there it now attained its second era of glorious success. A constellation of ingenious men, endowed with uncommon talents, appeared to spread its light once more through the world; and painting was perfected, as far as perhaps human nature can carry it, in the works of Michael Angelo, Raphael, Titian, and Correggio.

Whilst painting was pursued at Florence in its higher principles, and thence transplanted pure to Rome to adorn the pontifical palaces, &c. of the imperial city, its more alluring though less solid charms were cultivated at Venice, where colour occupied the attention of the artists. Among those artists Giorgione del Castal Franco, born in 1477, has the reputation of having begun that system of colouring which his early death alone prevented his carrying to perfection. Had the period of his existence been prolonged, it is probable that Titian would not have stood so completely alone as he now does at the head of the Venetian school.

The patronage which the art enjoyed in Italy from its commencement, kept pace with its progress, till it was perfected by the family of the Medici at Florence, and by Julius II. and Leo X. at Rome.

About the end of the 16th century, the eclectic school of Bologna was founded under the auspices of the Carracci; and if they did not complete the object they proposed, yet, by their exertions and abilities, they prevented for a while the retrograde of art.

It was not till the 15th century that painting claims our attention in Germany. At that time Albert Durer relieved it from little better than obscurity, by his ingenuity and fertile invention, and his skilful attention to individual form.

Lucas Van Leyden was the best of those who attempted to rival the name of Albert Durer, unless we except Holbein, who, though he never equalled him in composition, infinitely surpassed him in portraiture.

In Flanders and Holland, as in Italy, the system of religion found occupation for the artists; but its exercise soon deviated into common life, and reached its ultimatum in the days of Rubens and Rembrandt.

So little is known of the art of painting in England previous to the time when Henry VIII. encouraged Holbein and invited Titian, that it would be difficult to trace its history. Enough, however, is known, to satisfy us that it was at a very low standard. The ambition of Henry to be renowned, and his spirit of rivalry to his great neighbour, Francis the First of France, were quite sufficient motives to stimulate him to the proud aim of becoming a patron of the liberal arts, had not his theological discussions with Luther, and afterwards his more sublunary quarrel with the pope, so powerfully diverted his attention from them.

In the succeeding reigns of Edward VI., Mary, and Elizabeth, some few portrait-painters met with encouragement: Sir Antonio More, Zucchero, Oliva, and others of less note, exerted themselves to support this branch of art with varied success. But during the long and splendid reign of the latter sovereign, historical painting was not only denied encouragement, but repressed with severity.

Charles I. endeavoured to introduce a feeling for the art, which his father had almost entirely overlooked. He employed Rubens, during his short residence here as envoy from the king of Spain, to paint the ceiling of the banqueting-house at Whitehall; and procured a treasure of inestimable value to the country by the countenance and encouragement he afforded Vandyck.

Charles II. encouraged Verrio, Benedotto, and Gennaro; the former he employed to decorate the ceilings and walls of Windsor Castle. In portraiture, Sir Peter Lely filled, with great ability, the place which Vandyck had held. Sir Godfrey Kneller in this reign began his long career of portrait-painting.

In historical painting, no English artist had appeared to rival the productions of the foreigners introduced here, in any degree, till Sir James Thornhill, born in 1677, arose to contest the honours of the palette with La Guerre, who had been employed to adorn the halls and staircases of many of our nobility. What Sir James had done in historical, or rather decorative art, found no very successful imitator; and at the commencement of the reign of George I., the arts in England were at the lowest ebb, nor did they emerge till Hogarth, Sir Joshua Reynolds, and Wilson appeared.

In 1768, the Royal Academy was established under the auspices of his most gracious majesty George III. The rapid progress of the arts since that period is developed in the annual exhibitions at Somerset House and the British Gallery.

Painting on Enamel was practised in great perfection as early as the time of Semiramis, who having thrown a bridge over the Euphrates at Babylon, erected a castle at each end of it, and enclosed them by three walls of considerable height, with towers upon them: these were built of brick painted and burnt, having on them not only single figures of animals, but combined groups: one was a hunting-piece, wherein the queen herself was represented on horseback, throwing her dart at a panther; and near her Ninus, striking a lion to the earth with his spear.

SCULPTURE.

This art is mentioned as early as the Book of Genesis, where Rachel stole her father's gods, which are called *teraphim*, or images. In Exodus, Moses receives commands and instructions concerning the tabernacle, that he should cause it to be made according to the pattern which was shewn him on the Mount; and in order to this, Bezaleel and Aholiab are inspired with the spirit of God "to devise cunning works in gold, and in silver, and in brass, and in cutting of stones, and in carving of timber, to work all manner of workmanship."

There are no works of sculpture discovered in any country at all to be compared with Greek art. Nothing is left of the times of Nebuchadnezzar, nor of Semiramis, nor of Belus: their names remain in history, but not in sculpture.

About 1300 years before the Christian era, a sculptor appeared, whose works exacted the praise of poets and the record of historians. This was DÆDALUS, the countryman and contemporary of Theseus, not inferior, perhaps, in fame and variety of adventures to that hero. Born of a royal race, the occasional friend and adversary of kings, admired for his works when living, and honoured with a chapel by the Egyptians after death! To him are attributed various mechanical inventions, fabulous and real; a fine portico to the temple of Vulcan at Memphis, the Cretan Labyrinth, &c.

Passing over many others, we come at once to Phidias, who flourished at the same time with the philosophers Socrates, Plato, and Anaxagoras; the statesmen and commanders Pericles, Miltiades, Themistocles, Cimon, and Xenophon; and the poets Æschylus, Euripides, and Sophocles. He was "most famous," says Pliny, "throughout all nations;" and when enumerating the most celebrated sculptors of antiquity, he says, "but before all, Phidias the Athenian;" and Quintilian says, that "his Athenian Minerva and Olympian Jupiter, at Elis, possessed beauty which seemed to have added something to religion, the majesty of the work was so worthy of the divinity."

At this period (490 years before the Christian era) sculpture had arrived at maturity, and did not begin to decline till the reign of the Antonines.

The principal schools of sculpture were at Athens and Rhodes. The sculptors of the Laocoon, and Toro Farnese, and the Colossus, were Rhodians; and it is almost incredible that from this little island, only 40 miles long and 13 broad, the Roman conquerors brought away 3000 statues. But we shall more readily believe this, when we recollect that the force and enterprise of these islanders were sufficient to conquer the navy of Antiochus, commanded by Hannibal.

In Rome, Bruneleschi, who was an excellent sculptor and architect, revived, by his indefatigable care, the true and ancient sculpture; Dominic Ghirlandaio, the master of Michael Angelo, followed the example of Bruneleschi; and by the illustrious Michael Angelo the art was again brought to perfection.

Canova perhaps attained more celebrity than any other sculptor since Michael Angelo.

ARCHITECTURE.

So much space is devoted to this branch of the "fine arts," under the head of the five orders of architecture, that we can do little more here than enumerate some of the best examples of the different orders. Of the Tuscan, probably, there are none better than Trajan's Column at Rome, and Covent-Garden Church, London. Of the Greek Doric, the Parthenon and Temple of Theseus at Athens; of the Roman Doric, the Theatre of Marcellus at Rome, and the column called the "Monument" in London. Of the Greek Ionic, the little Temple on the river Ilissus, and the Temple of Erectheus at Athens; of the Roman Ionic, the Theatre of Marcellus at Rome. Of the Corinthian, the portico of the Pantheon, and three columns in the Campo Vaccino at Rome, and the portico of the Church of St. Martin's in the fields, London. Of the Composite, the Arch of Titus at Rome, and the Baths of Dioclesian at Rome, and the banqueting-house at Whitehall, London.

Besides the Greek and Roman, there are other styles of architecture, called the pointed or Gothic, the Saxon and the Norman styles, which were in use during the middle ages; and although they are at variance with all the ancient rules of art, and have been held in contempt by most of the followers of the classical schools, are nevertheless exceedingly picturesque and beautiful.

All our ecclesiastical as well as domestic edifices, erected prior to the time of Inigo Jones, are in one or other of these styles; and of which many glorious monuments are yet standing.

ENGRAVING, though not ranking with the three foregoing, may justly be called a "fine art." It was in practice in England at a very early period, as may be seen by the instruments of war and other antiquities which have been found in the Celtic and Saxon tumuli: these frequently bear marks of the graver, or some tool which cannot have been very dissimilar.

This art has been performed in different countries, and at different periods of time, on various substances; chiefly on metals, wood,* and the oriental precious stones, which is called gem engraving, but with instruments that have varied little since they were first invented. The metals upon which engraving is chiefly employed, are copper and steel: the former for producing impressions on paper in various ways, the latter for striking coins, medals, &c.

Engraving on copper, for the purpose of producing impressions, may be divided into five species: engraving in *aqua-tinta;* engraving in the chalk manner (*stippling*)*;* engraving with aqua-fortis (*etching*)*;* engraving in mezzotinto (*scraping*)*;* and the original art of engraving in lines. By a recent discovery, steel is tempered and used by engravers in the same manner as copper.

III DUTIES of the ROMAN LICTORS. Lictors, among the Romans, were officers established by Romulus; they always attended the chief magistrates in public.

---

* Wood engraving is called Xylography.

The duties of their office consisted in the three following particulars:—1. *Submotio*, or clearing the way for the magistrates they attended; this they did by word of mouth, and if there was occasion, by using the rods they always carried. 2. *Animadversio*, or causing the people to pay the usual respect to the magistrate; as to alight, if on horseback or in a chariot; to rise up, uncover, make way, and the like. 3. *Præites*, or walking before the magistrates. They also preceded the triumphal car in public triumphs; and it was part of their duty to arrest criminals and to be public executioners.

The ensigns were the fasces and securis.

The number of lictors allowed to each magistrate were, to a dictator 24, to a consul 12, to a prætor six, and each vestal virgin, when she appeared abroad, had one.

III CLASSES of GAMES among the Romans. They were called *sacred*, *honorary*, and *ludicrous*. Sacred games were those instituted immediately in honour of some deity: honorary games were those exhibited by private persons out of their own purses, in order to gratify the people, or ingratiate themselves with them, to make way for their own preferment. Such were the combats of gladiators, scenic games, tragedies, comedies, and other theatrical and amphitheatrical sports.

Ludicrous games were of the same kind with the games of exercise and hazard among us. Such were the ludus Trojanus or Pyrrhus; the tesseræ, and tali or dice; and the lantranculi or chess; the discus or quoit, &c. &c.

III SECTIONS of ANIMALCULES, *visible, microscopical*, and *invisible*. The first, though visible, cannot be accurately discerned without the help of glasses; the second are discernible only by the microscope; and the last are merely presumed to exist, for they are still unknown. The existence of the latter cannot be well disputed, though it cannot be asserted, unless we conclude that the microscope has not yet arrived at its highest degree of perfection. Reason and analogy give some support to the conjectures of naturalists in this respect. Animalcules are discerned of various sizes, from those which are visible to the naked eye, to such as appear only like moving points under the microscopic lenses of the greatest powers.

Amongst the animalcules visible, are included an amazing variety of creatures, by no means of an analogous nature. Those numerous creatures which crowd the water in the summer months, changing it sometimes of a deep or pale red colour, green, yellow, &c. are of this description. The larger kinds are chiefly of the insect or vermes tribes, and of which the monoculus pulex is particularly remarkable, being sometimes found in such abundance as to change the water apparently to a deep red. A similar appearance is likewise occasioned by the cercaria mutabilis, when it varies in colour from green to red; vorticella fasciculata also changes it to green, and rotatoria to yellow.

The microscope discovers legions of animalcules in most liquors, as water, vinegar, beer, dew, &c. They are also found in rain and several chalybeate waters, and in infusions of both animal and vegetable substances.

III CAUSES of DREAMS. Dr. Hartley says, " dreams are nothing but the imaginations or reveries of sleeping men, and they are deducible from three causes; viz. the impressions and ideas lately received, and particularly those of the preceding day; the state of the body and particularly of the stomach and brain; and association."

Aristotle asserted that a dream was only the appearance of things, arising from the previous motions excited in the brain, and remaining after the objects are removed. Hobbes has adopted this hypothesis: he ascribes different dreams to different distempers of the body, and whimsically observes, that " lying cold breedeth dreams of fear, and raiseth the thought and image of some fearful object." Thus he accounts for what was in reality the waking vision of Brutus, which addressed him the night before the battle of Philippi.—" I am, Brutus, thy evil genius; but thou shalt see me again near Philippi."

Mr. Locke, though he does not expressly declare how dreams are excited during sleep, seems to ascribe the perfection of rational thinking to the body, and traces their origin to previous sensations, when he says—" The dreams of sleeping men are all made up of the waking man's ideas, though for the most part oddly put together." He urges the incoherence, frivolousness, and absurdity of our dreams, as well as the supposed fact that some sleep without dreaming, as objections to the notion that men think always: to which it has been replied, that dreams may be entirely imperfectly, or not at all remembered, according to the various degrees in which the nerves are impressed, by the motion given to the animal spirits in sleep.

III DEGREES of PUBLICANS among the ROMANS.

The function of publican was usually exercised by the Roman knights, who constituted an order of great consideration, and a kind of middle rank between the senators and people. Their institution is as early as Romulus.

The publicans are divided by Sigonius into three sorts or degrees; the farmers of the revenues, their partners, and their securities. These are called *mancipes*, *socii*, and *prædes*, who were all under the quæstores ærarii that presided over the finances of Rome. But there were properly only two sorts of publicans, the mancipes and the socii.

The former were much superior to the common publicans in dignity, being mostly of the equestrian order. Cicero mentions them with great respect. But the common publicans, the collectors or receivers, as many of the socii were, they were spoken of with great contempt by the heathens as well as Jews; and particularly by Theocritus, who said, that among the beasts of the wilderness, bears and lions were the most cruel; among the beasts of the city, the publican and parasite.

The reason of this hatred was their rapine and extortion; for, having a share in the form of the tribute, they oppressed the people with illegal exactions.

III INDICTIONS. Indiction was a term used for a kind of epocha, or manner of counting time, among the Romans, containing a cycle, or revolution of fifteen years, which, when expired, begins anew, and goes round again without intermission. This method of computation has nothing to do with the heavenly motions.

Petavius says, there is nothing in chronology less known than the Roman indiction; he means its origin and commencement. It is the general opinion, that it was instituted in the time of Constantine, about the year 312; but this is mere guess. There were indictions in the time of Constantius, as appears from the Theodosian Code.

There are three kinds of indictions mentioned by authors; the indictions of Constantinople, beginning on the first of September; the imperial or Cæsarean indiction, on the fourteenth of September; and the Roman or papal indiction, which is that used in the pope's bulls, and begins on the first of January.

III SORTS of TRIPODS. The ancient tripod was a sacred seat or stool, supported by three feet, on which the priests and sibyls were placed to render oracles. On the Roman medals the tripod expresses some priesthood, or sacerdotal dignity. A tripod with a raven and a dolphin is the symbol of the duumviri, deputed for keeping the Sibylline oracles.

Banier distinguishes three kinds of tripods. Under the first he includes those used by the Pythia, when she delivered the oracles of Apollo in the temple of Delphos. The second comprehends whatever stood upon three feet, such as vases, tables, &c. Under the third class are included votive tripods, which princes or private persons dedicated in the temples of Apollo.

III PARTS of a SWORD. The masters of defence divide the sword into three parts, which they call the *foot*, *middle*, and *foible*.

Anciently there was a kind of two-handed swords, called *spados*, which were to be managed with both hands; and which in those days they accustomed themselves to brandish so nimbly, as to cover the whole body with them.

The savages of Mexico, when first visited by the Spaniards, had a kind of wooden swords, which would do as much execution as ours. In Spain, swords are only allowed of certain lengths, determined by authority. The ancient cavaliers gave names to their swords: *Joyeuse* was that of Charlemagne; *Durandol* that of Orlando, &c.

Before the discovery of metals, swords were fashioned, probably, like those of the Mexican savages already mentioned, of some heavy wood, hardened by fire; next to these, brazen, or rather copper swords, were introduced, of which sort many have been found in Ireland; and after the art of tempering steel was understood and practised, they were made of this metal. In early ages, swords were of such value as to be kept in temples and sanctuaries, and to be specially bequeathed in the wills of princes and great warriors; and in the days of chivalry, they were distinguished by proper names, descriptive of their supposed qualities, or alluding to their destructive powers; a method of distinction borrowed from the Persians and Arabians, and practised by Mahomet. Swords were also of various forms, and used with one or with both hands, for thrusting or cutting, or for both purposes. The swords used by the Roman legionary troops were very short and strong, the blade rarely exceeding nineteen inches in length, two-edged, and made for either stabbing or cutting. Those of the Britons, called spathæ, were large, long, and heavy, as were also those of the Saxons. The Norman swords were also long and heavy. The sword was carried in a belt of buff or other leather, girded round the body, or thrown over the right shoulder: these shoulder-belts were called baudricks. Among modern swords, we read of a braquemart, or short sword, the stoccado, or long sword; the espadon, or two-handed sword; the Swiss, or basket-hilted sword; a Spanish sword or Toledo; a tuck enclosed in a walking-stick; a poniard, a dagger, which seems to have been the constant companion of the sword, at least since the days of Edward I., sabre, and scymitar; to which may be added the shable or broad-sword, with only one edge.

III WAYS of STIGMATISING or marking the HUMAN BODY. The ancients sometimes branded their slaves as a punishment, but more frequently to mark them, as the moderns do their cattle, when they turn them into forests, &c., where they mingle with others. It was done by applying a red-hot iron, marked with certain letters, forming the name of some peculiar character belonging to their masters, to their foreheads, till a fair impression was made; and then pouring ink into the furrows, that the inscription might be the more conspicuous.

Soldiers were branded in the hand with the name or character of their general.

After the same manner, it was customary to stigmatise the worshippers and votaries of some of the gods. The marks used on these occasions were various: sometimes they contained the name of the god, sometimes his particular ensign, as the thunderbolt of Jupiter, the trident of Neptune, the ivy of Bacchus, &c.; or they marked themselves with some mystical number, by which the god's name was described. To these three ways of stigmatising St. John is supposed to refer (Rev. chap. xiii. verses 16, 17). Theodoret is of opinion, that the Jews were forbidden to brand themselves with stigmata, because the idolaters, by that ceremony, used to consecrate themselves to their false gods.

Among some nations, stigmatising was considered as a distinguished mark of honour and nobility. In Thrace, as Herodotus tells us, it was practised by none but persons of credit, nor omitted by any but persons of the meanest rank.

The ancient Britons are also said to have imprinted on the bodies of their infants the figures of animals, and other marks, with hot irons.

III CLASSES of STONES. The solid parts of the globe are principally composed of stones, formed of the different earths, more or less combined with each other, and in different states of induration. The chemical and physical properties of stones fall properly under the investigation of the mineralogist; and the order in which they are arranged over each other, in the great stony masses that compose rocks and strata, constitutes a part of the science denominated geology.

The chemical systematics and metallurgists in their arrangements usually begin with the earths, considering them as the basis of stones. Linnæus begins with the latter, professing to take a middle way between the mere metallurgist and those who characterise from external appearances; only he divides the whole *regnum lapidum* into three classes, under the names of *petræ*, *mineræ*, and *fossilia*, each being subdivided into several orders, and comprehending in the whole fifty-four genera.

To the first class belong petræ, or stones, which he defines to be fossile bodies, originating from a terrene principle by cohesion. These are simple, as in their composition they are destitute of saline, inflammable, and metallic principles; they are fixed, as not being entirely and intimately soluble in any menstruum; and similar, as they consist of homogeneous component parts. Of these there are five orders; viz.

1. The *humosæ*, or slaty stones, which originate from vegetable earth, are combustible, and leave light gross ashes. 2. The *calcaræ*, or calcareous stones, which originate from calcareous marine animal bodies, become light and porous in the fire, and fall into an impalpable powder, and effervesce, and are soluble in acids, unless they are previously saturated with an acid, as *gypsum*. 3. The *argillaceæ*, or argillaceous stones, which originate from the viscid sediment of the sea, are somewhat unctuous to the touch, and harden in the fire. 4. The *aranatæ*, or sand-stones, which originate from the precipitation of rain water, are extremely hard, strike fire with steel, and by triture yield a very rough powder. 5. The *aggregatæ*, or rock or compound stones, which originate from a mixture of the four preceding orders variously conglutinated; the interstices usually filled up with quartz, spar, or glimmer.

The second class of fossile bodies are the *mineræ*, or minerals, which Linnæus defines to be fossile bodies, originating from a saline principle by crystallisation; they are compound, as consisting of a base, united with saline, inflammable, or metallic principles; they are soluble, perfectly in an appropriate menstruum. Of these there are three orders; viz.

1. *Salia*, salts or crystals, which are sapid bodies, soluble in water; distinguished from each other by their different effects on the organs of taste. 2. *Sulphura*, or inflammable bodies, flaming and odorous while burning; soluble in oil, and distinguished from each other by their different effects on the organs of smell. 3. *Metalla*, or metals, which are shining, heavy bodies, fusible in the fire, and soluble in appropriated menstrua; distinguished from each other by inspection.

The third class are fossils, which are bodies originating from different modifications of the subjects comprehended in the preceding classes. Of these there are three orders; viz.

1. *Petrificata*, or such fossile bodies as represent in figure certain animals or vegetables, or parts of them. 2. *Concreta*, which are slight conglutinations of different kinds of earths, whose specific differences arise principally from the nature of the component parts. 3. *Terræ*, or earths, which are fossile substances not conglutinated, but usually in a slightly cohering or pulverised state.

III PRINCIPAL ALKALIES. These are potass, called the vegetable alkali; soda, the mineral alkali; ammonia, the volatile alkali.

Potass is found in some minerals and earths, but is procured principally from the ashes of burnt wood, vegetables, &c., by mixing them with water (which dissolves the potass), and evaporating the solution to dryness.

Soda is procured by a similar process, from the ashes of marine plants; and exists abundantly in sea-water, in combination with carbonic acid, in the natron beds of Egypt, and other parts of the world.

Ammonia exists pure only in the form of gas, and is produced copiously from all animal and some vegetable substances, in a state of putrefaction. It is equally obtained by a dry distillation of bones, horns, &c., and possesses a pungent smell, is readily absorbed in water, and, next to hydrogen gas, is the lightest known ponderable substance.

The other alkalies are lithina, delphine, brucine, vauqueline.

III INGREDIENTS of GUNPOWDER. Gunpowder is a composition of *nitre*, *sulphur*, and *charcoal*, mixed together, and usually granulated, which easily takes fire; and when fired, rarefies or expands with great vehemence, by means of its elastic force.

It is not ascertained to whom the discovery of gunpowder rightly belongs. The invention is generally attributed to Bertoldo Schwartz, about the year 1320; and the first use of it is ascribed to the Venetians, in the year 1380, during the war with the Genoese, at a place called Fossa Clodia, now Chioggia, against Laurence de Medicis; and it is said that all Italy made complaints against it, as a manifest contravention of fair warfare. But this account seems to be erroneous, though generally a received one.

Our Roger Bacon knew of gunpowder nearly a hundred years before Schwartz was born. That excellent friar, in a treatise published at Oxford in 1216, says, "that from saltpetre and other ingredients we are able to make a fire that will burn at what distance we please."

Mr. Robins supposes that Bacon describes gunpowder, not as a new composition first proposed by himself, but as the application of an old one, and that it was known long before his time. Marcus Græcus, an ancient author, who probably lived in the beginning of the ninth century, describes two kinds of fire-works; one for flying, enclosed in a case or cartouche, made long and slender, and filled with the composition, closely rammed, like our modern rocket; and the other thick and short, strongly tied at both ends, and half filled, resembling our cracker. The composition which he prescribes for both is two pounds of charcoal, one pound of sulphur, and six pounds of saltpetre, well powdered, and mixed together in a mortar.

Before the invention of gunpowder, machines were used for throwing stone bullets, and other heavy bodies. These were called ballista, catapulta, &c., which produced effects by means of the action of a spring, formed by a strongly-twisted cordage of tough and elastic animal substances, no less terrible than the cannon and mortars of the moderns.

This sort of artillery is mentioned in the Second Book of Chronicles. One of the kings of Judah, 800 years before the Christian era, erected on the towers and bulwarks of Jerusalem engines of war for shooting arrows and great stones for the defence of that city.

III KINDS of MARQUETRY. Marquetry is a curious kind of inlaid work, composed of pieces of hard fine wood, of different colours, fastened in thin slices on a ground, and sometimes enriched with other matters, as tortoiseshell, ivory, tin, and brass.

There is another kind of marquetry, made, instead of wood, of glasses of various colours; and a third, where nothing but precious stones and the richest marbles are used: but these are generally called *mosaic* work. The art of inlaying is very ancient, and is supposed to have passed from the east to the west, brought by the Romans from Asia. It was then but a simple thing; nor did it arrive at any tolerable perfection till the fifteenth century among the Italians. It attained its height in France in the reign of Louis XIV.

Till John of Verona, contemporary with Raphael, the finest works of this kind were only black and white, which are what we now call *morescoes;* but that ingenious man stained his woods with dyes or boiled oils which penetrated them. Those who succeeded him, not only improved on his invention, but by the discovery of America had also the advantage of a number of fine new woods, of naturally bright colours.

Marquetry, or the art of inlaying woods, tortoiseshell, &c. with brass, is now brought to great perfection in England. It is better known by the name of Boule, or Bhul-work.

III WAYS of MANUMITTING SLAVES. The manumission of slaves by the Romans was performed in three several ways: 1. When, with the master's consent, a slave had his name entered in the census, or public register of the citizens. 2. When the slave was led before the prætor, and that magistrate laid his wand, called *vindicta*, on his head. 3. When the master gave the slave his freedom by testament.

It was not necessary that the prætor should be on his tribunal, to perform the ceremony of manumission: he did it any where, in his house, in the street, in going to the bath, &c. He laid the rod on the slave's head, pronouncing these words: "I declare him a freeman, after the manner of the Romans." This done, he gave the rod to the lictor, who struck the slave with it on the head, and afterwards with his hand on his face and back; and the notary entered the name of the freed-man in the register, with the reasons of his manumission.

The slave had likewise his head shaved, and a cap given him by his master, as a token of freedom. Tertullian adds, that he had also a kind of name given him; if so, three names were not a token of nobility, but of freedom.

Of manumission there have been several forms in England. In the time of William the Conqueror, villains were manumitted by the master's delivering them, by the right hand, to the viscount, in full court, showing them the door, giving them a lance and a sword, and proclaiming them free.

There is no mention of slaves before the deluge, but immediately after, viz. in the curse of Canaan, Gen. ix. 25, whence it is inferred that servitude commenced after that time; for in Abraham's days we find it generally established. Some say it commenced under Nimrod, because it was he who first began to make war, and of consequence to make captives; and to bring such as he took either in his battles or irruptions into slavery.

Among the Roman slaves there was a class distinguished by the appellation of "mercenarii," so called from the circumstance of their *hire*. These were free-born citizens, mentioned in the law-books by the name of *liberi*, and thus contra-distinguished from the *alieni*, or foreigners, who, from various contingencies of fortune, were under the necessity of recurring for support to the service of the rich. The Grecian *thetes* were also of this description.

There was also another class of servants, which consisted of those who had suffered the loss of liberty from their own imprudence. Such were the Grecian *prodigals*, who were detained in the service of their creditors till the fruits of their labour were equivalent to their debts; the *delinquents*, who were sentenced to the oar; and the German *enthusiasts*, mentioned by Tacitus, who were so addicted to gaming, that when they had parted with every thing else, staked their liberty and their persons. "The loser," says the historian, "goes into a voluntary servitude; and, though younger and stronger than the person with whom he played, patiently suffers himself to be bound and sold. Their perseverance in so bad a custom is styled *honour*. The slaves thus obtained are immediately exchanged away in commerce, that the winner may get rid of the scandal of his victory."

The Romans had the power of life and death over their slaves, which no other nation had; but this severity was afterwards moderated by the laws of the emperors, and by one of Adrian, it was made capital to kill a slave without a cause.

The custom of exposing old, useless, or sick slaves in an island of the Tiber, there to starve, seems to have been common in Rome; and whoever recovered, after having been so exposed, had his liberty given him by an edict of the emperor Claudius, in which it was likewise forbidden to kill any slave merely for old age or sickness. Nevertheless, it was the professed maxim of the elder Cato to sell his superannuated slaves for any price, rather than maintain what he deemed an useless burthen. The ergastula, or dungeons, where slaves in chains were forced to work, were in every part of Italy. Columella advises that they be always built under ground, and recommends it as the duty of a careful overseer to call over every day the names of these slaves, in order to know when any of them had deserted. Sicily was full of ergastula, and the soil was cultivated by labourers in chains.

There was with the Romans another description of slaves — the gladiators retained to fight in the arena, for the entertainment of the people. Condemned criminals were employed as gladiators, and obtained their discharge after serving three years in the arena.

The origin of such combats seems to be as follows. From the earliest times it had been the practice to sacrifice captives or prisoners of war to the manes of the great men who had died in the engagement: thus Achilles, in the Iliad, lib. xxiii., sacrifices twelve young Trojans to the manes of Patroclus. In course of time, they came to sacrifice slaves at the funerals of all persons of condition; this was even esteemed a necessary part of the ceremony, but as it would have appeared barbarous to have massacred them like beasts, they were appointed to fight with each other, and endeavour to save their own lives, by killing their adversaries.

The first show of gladiators was exhibited by M. and D. Brutus, upon the death of their father, in the year of the city 488. At this exhibition, there were only three pairs of gladiators; but in the time of Julius Cæsar's ædileship the shows consisted of 500 pairs.

These sports were become so common, and their consequences in a variety of respects so dangerous, that Cicero preferred a law, that no person should exhibit a show of gladiators within two years before he appeared candidate for any office. Julius Cæsar ordered, that only a certain number of men of this profession should be in Rome at one time. Augustus decreed, that only two shows of gladiators should be presented in a year, and never above sixty couples in a show.

Marcus Aurelius retrenched the enormous expenses of these combats, and would not suffer the men to fight with any other weapons than very blunt swords, like foils; so that they might shew their address without the danger of being killed. But the honour of suppressing them was reserved for Christianity; and it cost many efforts, and much time, to effect this purpose; so rooted was the evil, and so much had it established itself, by the long prescription, and the opinion of the world, that these exhibitions were acceptable to the gods.

The gladiators waged a destructive war with the Romans, about the year of their city 680, called the *servile war*. Spartacus, Crinus, Œnomaus, having escaped with other gladiators, to the number of seventy-four, out of the place where they had been kept at Capua, gathered together a body of slaves, put themselves at their head, rendered themselves masters of all Campania, and gained several victories over the Roman prætors. At length they were defeated, in the year 682, at the extremity of Italy, having in vain attempted to pass over into Sicily.

This war proved very formidable to the Romans. Crassus was not able to finish it: nor was it terminated till the great Pompey was sent as general.

III ANCIENT STYLES of DANCING. The ancients had three kinds of dances; the first grave, which they called EMMELIA; the second gay, called CORDAX; the third was a mixture of gravity and gaiety, called SICCINIS.

Dancing has always been in use among all nations, both civilised and barbarous; though held in esteem by some, and in contempt by others. Of itself, no doubt, dancing is harmless. There is a time, says the preacher, to dance; and sometimes it is even made an act of religion. Thus, David danced before the ark, to honour God, and express his joy for its return into the city of Sion. The daughters of Shiloh are said likewise to have danced in a yearly feast of the Lord; and we find many references to this practice in the religious solemnities of the Jews. From them it passed to the Egyptians, and afterwards to the Greeks and Romans, with whom it was a principal worship of their false gods.

With the ancient Hebrews, as the sacred writings inform us, dancing made a part of the celebration of all great events. In Egypt, dancing was a principal part of the religious rites of the priesthood; and it was in imitation of them that the children of Israel danced round the golden calf in the desert. According to the Greek mythology, Orpheus introduced into his country festal ceremonies similar to those of Egypt, in all which the song and the dance prevailed. The ingenuity and elegant taste of the Greeks improved, refined, and polished their sacred ceremonies, which were adopted by the greatest part of the world; particularly by the Romans, who were original and superior in nothing but the art of war, and in plundering, slaughtering, and enslaving mankind.

The solemn dances of the Hebrews were admitted in great festivals and celebrations by the primitive Christians, in which even the bishops and dignified clergy, according to Scaliger, were performers; and dispositions were made, in the first temples that were erected after Christianity was firmly established by Constantine, for these sacred dances. Menestrier says, that he had seen the canons and choristers, on Whitsunday, take each other by the hand, and dance, while they sung hymns of jubilation. He pointed out many ancient churches in which the choir was constructed in a theatrical form. The choir was formerly separated from the altar, elevated, and enclosed on all sides with a balustrade. It had a pulpit on each side, in which the epistle and gospel were sang, as may be seen in the churches of St. Clement and St. Pancratius at Rome.

Dancing on domestic festive occasions chequered the monotony of ancient simplicity of manners. Socrates himself learned late in life to dance; and Cato, with all his rigour and severity of manners, disdained not, at upwards of sixty, sometimes to practise what he had learned in his youth.

The feast of Flora, in the beginning of May, was more particularly celebrated by dancing than any other pagan festival; and among Christians, the May-poles erected in our villages, adorned with garlands of real flowers as well as artificial, around which our peasants and domestics dance, are remains of the pagan celebration of spring.

Some years ago, Thoinot Arbeau, a dancing-master of Paris, gave an orchesography, wherein all the steps and motions of the dance are written or noted down, as the sounds of a song are scored in music.

III KINGS of ISRAEL. The judges of Israel were succeeded by kings, who were of two sorts; viz. those that reigned over the whole Hebrew nation, and who were only three, Saul, David, and Solomon; and those that reigned over some of the tribes only. SAUL began his reign in the year B. C. 1095, and having reigned 40 years, was succeded by Ishbosheth his son, who reigned seven years over part of Israel, and had for his successor DAVID, who was anointed to be king after Saul by Samuel, B. C. 1093, and who became sole king B. C. 1048. Having reigned wholly and in part 40 years, he was succeeded by his son SOLOMON, B. C. 1015, who died B. C. 975. After his death, the kingdom was divided.

III CHILDREN, The, of a king of ENGLAND, who reigned successively, were, EDWARD VI., MARY, and ELIZABETH.

Edward, the son of Henry the Eighth and Jane Seymour, was born in 1537, and died before he was sixteen, two years before his father's will allowed him to govern for himself. He was celebrated for an amiable disposition, and for considerable talents in the acquirement of learning. His maternal uncle, the earl of Hereford, afterwards duke of Somerset, assumed the title of protector, and under him great care was taken to inspire the young king with just principles with regard to the Protestant religion, by which he was induced to favour the reformation. Edward is advantageously remembered as the founder of some of the most splendid charities in the metropolis, among which may be mentioned Christ's Hospital, or the Blue-coat School.

Mary, whose mother was Katherine of Arragon, was born in 1516. In her infancy she was betrothed to three different persons; first, to the dauphin of France, next to the emperor Charles V., and afterwards to the duke of Orleans. The alliances did not take place. In 1553, on the death of her brother, she was placed on the throne, and her title universally recognised. She soon displayed a passionate zeal for the restoration of the Catholic religion. Her temper was sour and gloomy, and she inherited too much of the wildness and despotic humour of her father. She almost immediately reinstated those bishops who in the last reign had been deprived of their sees for their adherence to popery; while Cranmer was indicted for high treason, and several Protestant bishops thrown into prison. The next step which outraged the feelings, and cast down the spirits of those who adhered to the Protestant faith, was her marriage to the archduke Philip, son of the emperor Charles V. Previously to this, a complete restoration of the Catholic worship took place throughout the kingdom, and all the clergy who refused to comply with it were ejected from their livings. The princess Elizabeth, who was an object of peculiar hatred to her sister, on account of her attachment to the principles of the reformation, was thrown into the Tower; and Lady Jane Grey, with her unfortunate husband, whose lives had hitherto been spared, were executed. The sanguinary laws against the heretics were renewed; and the merciless scenes of cruelty which followed have deservedly stamped upon this sovereign the epithet of *bloody* queen Mary. In the space of less than four years, 277 persons were committed to the flames, including prelates and beneficed clergymen, laymen of all ranks, women, and even children. In 1557, to gratify Philip her husband, she made war with France; and in the following year lost Calais, after it had been more than 200 years in the possession of England. She died in the month of November, 1558, in the 42d year of her age, and the sixth of her reign.

Elizabeth, whose mother was Anne Boleyn, was born in the year 1533, and on the death of her sister succeeded to the throne. Proposals of marriage had been formerly made to her by the king of Sweden, which she thought fit to decline: a similar offer was made to her by Philip of Spain, her late sister's husband, which she likewise rejected. She now turned her thoughts to the restoration of the principles of the reformation, which was effected by the first parliament that met after her accession; and from this period England took the decided station among Protestant countries which it has ever since maintained. By the Catholics, Mary, the young queen of Scotland, who had received her education in France, was regarded as the true sovereign of England: she even assumed the ensigns and title of English royalty, which Elizabeth could never forget nor forgive. Mary's conduct on several occasions was not only imprudent in the highest degree, but furnished ample scope for the invectives of her enemies. Elizabeth was now considered as the head of the Protestant party in Europe, and in this character she made a treaty of alliance with the French Huguenots, and afforded them aid in men and money. Between Spain and France there was an avowed league for the extirpation of heresy, and Elizabeth felt herself justified to give assistance to Protestantism wherever it was in danger of being suppressed by force: her enemies retaliating, excited an insurrection among the English Catholics, at the head of which was the duke of Norfolk, who was afterwards discovered, tried, convicted, and beheaded. On the horrible massacre at Paris, in August, 1572, Elizabeth put herself and her court into deep mourning, and received with a marked and solemn silence the French ambassador who was sent to apologise for the bloody deed. A second conspiracy against the life of the queen having been discovered, in which Mary was implicated, fourteen of the conspirators were convicted and executed, and the queen of Scots herself brought to trial before a grand commission of forty noblemen and privy counsellors, who, after the usual forms, pronounced and signed a sentence of death against her, which Elizabeth affected to be unwilling to authorise. Mary was, however, executed on the 8th of February, 1586-7.

The next thing that engaged the attention of the queen and her ministers was the Spanish Armada. A fleet of 130 vessels, of which about 100 were galleons of larger size than any before used in Europe, and carried on board 19,295 soldiers, 8,456 marines, 2,088 galley-slaves, and 2,630 great pieces of brass ordnance. It was victualled for six months, and attended by thirty smaller vessels. Superstition added her fanatic but powerful aid: bulls, denouncing hell-fire to Elizabeth and her abetters, accompanied the squadron; and a consecrated banner from Rome waved over the heads of the new crusaders. On the 19th of July, the Armada arrived in the channel, disposing itself in the form of a crescent, and stretching the distance of seven miles from the extremity of one division to that of the other. The English admiral, Lord Howard of Effingham (under whom served Drake, Hawkins, and Frobisher, the most renowned seamen in Europe), had just time to get out of port when he saw it in full sail. The English fleet consisted of 140 ships. Effingham gave orders to avoid a close fight, but to skirmish with the larger ships of the Spanish fleet, which it did for six days. The Armada having reached Calais, cast anchor before that place, and waited the arrival of the prince of Parma, who delayed leaving the Flemish ports until he was assured that the Spaniards were masters at sea. Whilst the Spanish fleet lay confusedly in this position, the English admiral, by a successful stratagem, despatched eight of his smaller ships filled with combustibles, one after the other, into the midst of the enemy; and thus so alarmed them, that they cut their cables, and betook themselves to flight with the greatest disorder and precipitation. The English fell upon them next morning, took twelve of their large ships, and damaged several others. They were closely pursued and harassed in their retreat; and if the ammunition of the English had not failed, they probably would have taken them all. But the event proved almost equally fatal to the Spaniards; for a violent storm arising, they were dispersed and miserably wrecked on the coasts of Scotland and Ireland. Philip, as soon as he heard of the disastrous event, so mortifying to his pride and ambition, with an affected philosophy fell on his knees, and, rendering thanks for that gracious dispensation of Providence, expressed his joy that the calamity was not greater.

The first English newspaper, entitled the " English

Mercurie," was printed during the time of the Spanish Armada; the first number dated the 23d July, 1588.

Elizabeth next became the ally of Henry IV., in order to vindicate his title, and establish him firmly on the throne of France, and for several years the English auxiliaries served in that country; while several naval expeditions, undertaken by individuals or by the queen, raised the reputation of England to an extraordinary height. At this period Robert Devereux, earl of Essex, the queen's favourite, highly distinguished himself. In 1601, Elizabeth held a conference with the marquis de Rosni, better known in history as the celebrated Sully, for the purpose of establishing a new system of European power, with a view of controlling the vast influence of the house of Austria.

The queen having settled satisfactorily all her foreign affairs, her next object was to relieve the burthens of her people: she abolished a number of monopolies, and became extremely popular. But the execution of her favourite, the earl of Essex, for high treason, gave a fatal blow to her happiness. When she learned from the countess of Nottingham that he had solicited her pardon, which had been concealed from her, she at first became furious with rage; and when her violence of anger subsided, she fell into the deepest and most incurable melancholy, rejecting all consolation, and refusing food and sustenance of every kind. Ten nights she lay on the carpet, leaning on cushions which her maids brought her, and her physicians could neither persuade her to be put to bed nor take any remedies. Her end was visibly approaching, and the council assembled and sent the keeper, admiral, and secretary, to know her will with regard to her successor: she appointed her kinsman, James VI. of Scotland. Being advised by the archbishop of Canterbury to turn her thoughts to God, she replied that she did so, nor did her mind in the least wander from him. Her voice soon left her; her senses failed; she fell into a lethargic slumber, which continued some hours; and she expired quietly, without further struggle or convulsion, in the 70th year of her age, and forty-fifth of her reign.

LES QUATRE.

IV EVANGELISTS, St. Matthew, St. Mark, St. Luke, and St. John, the inspired writers of the Gospels. The symbols of these in the order above recited, according to St. Augustine's interpretation of Ezekiel, are a lion, a man, an ox, and an eagle.

St. Matthew was an apostle as well as a writer of the Gospel, and surnamed Levi. Before his conversion to Christianity, he was a publican, or toll-gatherer; a native of Galilee, but of what city in that country, or of what tribe of the people of Israel, we are not informed. Jesus found him at the receipt of customs, and called him to be witness of his words and works, thus conferring on him the honourable office of an apostle. It is a common opinion that St. Matthew died a martyr in Ethiopia, at a city called Naddabar.

St. Mark was the son of Mary, a pious woman at Jerusalem, and an early believer, at whose house the disciples used to meet, and to which Peter frequently resorted. St. Mark went with Paul and Barnabas to Antioch, and afterwards accompanied them to other countries as their minister. He founded a church at Alexandria, where he died and was buried, in the eighth year of Nero. St. Mark wrote his Gospel at Rome, to which city he accompanied Peter in the year of Christ 64 or 65.

Concerning the country and profession of St. Luke previously to his conversion to Christianity, great difference of opinion has existed among ancient and modern writers. Some have erroneously supposed that he was a painter; and others that he was a physician, and that it was he who was mentioned as the "beloved physician," Col. iv. 14. On the other hand, the learned Grotius and others have represented him to have been a Syrian, and a slave either at Rome or in Greece, and to have obtained his freedom and returned to his native place Antioch, where he became a Jewish proselyte, and afterwards a Christian. St. Luke was with St. Paul when the apostle was sent a prisoner from Cæsarea to Rome, and stayed with him during his two years' imprisonment in that city.

Besides the Gospel bearing his name, St. Luke wrote the Acts of the Apostles. He lived a single life, and died in the 84th year of his age, about the year of Christ 70.

St. John was the son of Zebedee, a fisherman of the town of Bethsaida, on the sea of Galilee, the younger brother of James the elder, and reckoned the youngest of all Christ's disciples. His mother's name was Salome. Before John was called to be an apostle, he had seen and heard our blessed Lord, and been witness to some of his miracles, particularly that at the wedding of Cana in Galilee. It is supposed by some that when he was appointed one of the twelve apostles, he was only twenty-two years old: others make his age at that time to have been twenty-five or twenty-six. St. John was distinguished by a temper singularly mild, amiable, and affectionate. He was eminently the object of our Lord's regard and confidence, and was characterised as "the disciple whom Jesus loved." Notwithstanding his affectionate attachment to Christ, and the numerous instances of kind and condescending attention with which he had been honoured, he, in common with the other apostles, betrayed a culpable timidity in forsaking him in his last conflict; though he afterwards recovered his firmness, and attended the crucifixion: indeed, he seems to have been the only apostle who thus hazarded his own safety. St. John lived to the age of 100 years, and died in the reign of Trajan. His writings are a Gospel, three Epistles, and the Book of Revelation.

IV CARDINAL VIRTUES. Justice, Temperance, Fortitude, and Prudence.

IV KINGS of ASSYRIA. Tiglath-Pileser, Shalmaneser, Sennacherib, and Essar-Haddon. It appears very probable that the Assyrian and Babylonian kings were two branches of the same family, and that Phul, the first Assyrian conqueror, left two sons, Tiglath-Pileser and Nabonnasser; to the former of whom he bequeathed the Assyrian, and to the latter the Babylonian kingdom. Tiglath-Pileser, the elder, resided at Nineveh, the original seat of the empire; while Nabonnasser, the younger brother, held his residence at Babylon. Several kings succeeded the above-named four; but we read nothing of them in Scripture till the reign of Nebuchadnezzar, who led the king and people of Judah into captivity, and also conquered Assyria, which was then added to the Babylonian empire.

IV LEARNED AGES. The first is the Grecian age, which commenced near the time of the Peloponnesian war, and extended to the time of Alexander the Great.

The second is the Roman or Augustan age — the days of Julius Cæsar and Augustus.

The third is that of the restoration of learning and the arts under the popes Julius II. and Leo X.

The fourth comprehends the age of Louis XIV. and Queen Anne.

IV LIQUID LETTERS. L, M, N, R.

IV LATIN WORDS for the size of BOOKS. Folio, Quarto, Octavo, and Duodecimo.

Folio is a large book, of which the pages are formed by each sheet of paper being once folded, making two leaves.

Quarto has each sheet twice doubled, making four leaves.

Octavo eight leaves, and Duodecimo twelve leaves.

The first books were in the form of blocks or tables; but as pliant materials came into use, it was found more convenient to make them in the form of rolls, which appear to have been used among the Jews, Grecians, and Romans, till some centuries after Christ. The copies of the Old Testament in the Jewish synagogues are to this day long scrolls of parchment rolled upon sticks. The shape now in use among us, though little known to the ancients, was invented by Attalus, king of Pergamos, to whom some ascribe the manner of preparing parchment. It was Philatius, a learned man at Athens, who first taught the use of a kind of glue to fasten the leaves together, on which account a statue was erected to him.

IV DIVISIONS of LANGUAGES. First, ancient languages; second, oriental languages; third, learned languages, otherwise called dead languages; and fourth, modern languages.

IV YEARS, an OLYMPIAD. It took its rise from the Olympic games, which were celebrated at the beginning of every fifth year, near Olympia, a city of Elis in Peloponnesus (now called the Morea); and by those periods the Greeks reckoned their time. Ancient authors also reckoned their chronology by Olympiads, beginning at the Olympiad which happened in the year before Christ 776.

IV VOLCANOES. The four principal volcanoes are Etna, in Sicily; Vesuvius, in Naples; Hecla, in Iceland; and Stromboli, one of the Lipari islands north of Sicily. The first eruption of Mount Vesuvius occurred in 79, in the time of Vespasian. Pliny, the celebrated natural philosopher of that age, excited by curiosity to observe its effects, lost his life by suffocation with the sulphureous smoke. It was in that dreadful eruption that the city of Herculaneum was overwhelmed. In 1537, an eruption took place which caused an earthquake for twelve days; its burnings were seen at Malta, a distance of sixty leagues.

IV SORTS of GOVERNMENT, viz. Theocracy, which is a state under the more immediate government of God, as was that of the Jews.

Monarchy, or kingly government. Some monarchies are *absolute*, that is, where the will of the prince is uncontrollable; others *limited*, where his authority is restrained by laws, as in England.

Aristocracy, that form of government in which the power is lodged with the nobles.

Democracy, which gives the power to the people.

IV SONS of ETHELWOLF who reigned, were Ethelbald, Ethelbert, Ethelred I., and Alfred.

IV NORMAN KINGS. William the Conqueror, William Rufus, Henry I., and Stephen.

IV GRAND or UNIVERSAL MONARCHIES. The Assyrian, the Persian, the Grecian, and the Roman.

The Assyrian lasted from the time of Nimrod to Sardanapalus, their last king, about 820 B.C. The Persian commenced under Cyrus, in the year 559 B.C., and closed in the year B.C. 331. The Grecian lasted only during the reign of Alexander the Great, beginning in the year B.C. 336, and terminating with the death of this conqueror B.C. 323, his conquests being then divided among his captains. The fourth monarchy was the Roman, which lasted 244 years, commencing with Romulus and ending with Tarquin the proud. The Roman empire commenced with Julius Cæsar, when he was made perpetual dictator after the battle of Pharsalia, in the year of the city 706, forty-eight years B.C. Some writers date the commencement of the Roman empire after the battle of Actium, with the first year of Augustus, A.U.C. 723, B.C. 31. The decline of the Roman empire may be considered as principally owing to the despotism of Severus, and the passive obedience of the people. From this period we behold a train of emperors vicious or impotent, either wilfully guilty or unable to assert the dignity of their station. The empire itself gradually decayed, harassed on all sides by powerful invaders, and convulsed by the furious contests of domestic foes. During the reign of Gallienus, thirty pretenders contended for the supreme power, and added all the calamities of civil war to the misfortunes of this devoted empire. The power and influence of the emperors were likewise diminished by the adoption of several colleagues, and by the division of the empire between the two sons of Theodosius the Great, A.D. 295. Arcadius was proclaimed emperor of the East, and Honorius emperor of the West. The western empire contained all Italy, Spain, France, Britain, Germany, Pannonia, and Africa. The eastern empire comprehended Asia the less, Arabia, Syria, Egypt, Lybia, and the several regions on the Danube. The seat of the empire was removed to Byzantium by Constantine, in the year of our Lord 328: the east and west were then united under the title of the Roman empire, till the Romans proclaimed Charlemagne emperor, A.D. 800. From this epocha the east and west formed two separate empires:

that of the east, governed by Greek emperors, commenced under Nicephorus, A.D. 802, or rather was continued; but, being gradually weakened, terminated under Constantine Palæologus in 1453, when the Saracens, having subdued Syria, Palestine, Egypt, Cilicia, and other neighbouring countries, and having ravaged the rest of the Roman territories in the East, besieged Constantinople under Mahomet II., and became masters of it. From this period the city has been the imperial seat of the Turkish or Ottoman emperors. The western empire, properly so called, terminated with Augustulus, son of Orestes, A.D. 476; but being revived under Charlemagne, it ended with Charles Le Gros, who possessed all the dominions of Charlemagne, A.D. 887, and it was afterwards known by the appellation of the *empire*, or German empire.

IV EMBER-WEEKS. The Ember-days are the Wednesday, Friday, and Saturday next after Quadragesima Sunday, or the first Sunday in Lent, after Whitsunday, after Holyrood-day in September, and after St. Lucy's-day in December; which four times answer well enough to the four quarters of the year, Spring, Summer, Autumn, and Winter. The Ember-weeks are now chiefly taken notice of on account of the ordination of priests and deacons; because the canon appoints the Sundays next succeeding the Ember-weeks for solemn times of ordination; though the bishops, if they please, may ordain on any Sunday or holiday.

IV DIVISIONS of JERUSALEM. Jerusalem, in its most flourishing state, was divided into four parts, each enclosed within its own walls; namely, the old city of Jebus, which stood on Mount Zion, where the prophets dwelt, and where David built a magnificent castle and palace, which became the residence both of himself and his successors, on which account it was emphatically styled the "City of David." The "lower city," called also the "Daughter of Zion," being built after it, on which stood the two magnificent palaces which Solomon built for himself and his queen; that of the Maccabean princes, and the stately amphitheatre raised by Herod, capable of containing 80,000 spectators; the strong citadel by Antiochus, to command the Temple, afterwards razed by Simon the Maccabee, who recovered the city from the Syrians; and, lastly, a second citadel, built by Herod upon a high and craggy rock, called by him Antonia. The "New City," mostly inhabited by tradesmen, artificers, and merchants: and "Mount Moriah," on which appeared the celebrated Temple of Solomon, described in the 6th and 7th chapters of the Second Book of Kings, destroyed by Nebuchadnezzar, rebuilt by the Jews on their return from Babylon, and afterwards renewed, augmented, and adorned by Herod.

IV OPERATIONS of the MIND, The, distinguished by logicians, are—

First, Perception, from which result our ideas.

Second, Judgment, which is the assembling our ideas together.

Third, Reasoning, which is the exercising our minds in producing proofs to apply to the discovery of facts.

Fourth, Method, which is the last operation of the mind, as we must perceive, judge, and reason, before we can methodise. The mind must be stored with the knowledge resulting from the foregoing operations before it can be capable of disposing its intellectual acquirements into classes, or of uniting them, according to their proper connexions and dependencies.

IV KINDS of RUMINATING ANIMALS, The, or animals that chew the cud, are, the cow kind, the sheep and goat kind, the musk animal, and the animals of the deer kind.

Ruminants are quadrupedal, hairy, and viviparous; some with hollow and perpetual horns, others with deciduous ones. They have four stomachs appropriated to the office, viz. 1. The *venter magnus*, or *paunch*, which receives the meat slightly chewed, retains it awhile, and then delivers it back into the mouth, which is what we call the *cud*, to be re-chewed—2. The *reticulum*, generally called the *honeycomb*, from its internal coat being divided into cells like honeycombs — 3. The *manifold*—4. The *maw*.

Instances have been known of men having the power of ruminating. Blumenbach says, "I have known two men who have ruminated their vegetable food; both assured me that they had a real enjoyment in doing this; and one of them had the power of doing it, or leaving it alone, according to circumstances;" it was with him quite voluntary.

The final purpose of rumination, and the chief utility of this wonderfully-complicated function in the animal economy, says the same author, are still unknown: what has been already suggested on these points is quite unsatisfactory.

IV CHIEF PROPERTIES of a verb: mood, tense, number, and person.

IV SORTS of NOUNS in English: proper, common, collective, and abstract.

IV SORTS of VERSE. Iambic, Trochaic, Dactylic, and Anapæstic.

IV SORTS of CERTAINTY. Mathematical, moral, physical, and theological.

IV SORTS of EVIDENCE, viz. of sense, of intention, of reason, and of faith.

IV LANGUAGES derived from the Latin, viz. the Portuguese, Spanish, French, and Italian.

IV LANGUAGES derived from the Sclavonian, viz. the Polonese, Russian, Calmuck, and Cossack.

IV ORIGINAL LANGUAGES, viz. the Latin, Celtic, Gothic, and Sclavonian, have given birth to those now spoken in Europe.

IV CLASSES of METALS. Dr. Thompson has divided the metals into four classes: — 1. Malleable — 2. Brittle, and easily fused — 3. Brittle and difficultly fused—4. Refractory.

I. *Malleable.*

1. Gold,
2. Platinum,
3. Silver,
4. Paladium,
5. Rhodium,
6. Iridium,
7. Osmium,
8. Mercury,
9. Copper,
10. Iron,
11. Lead,
12. Tin,
13. Nickel,
14. Zinc.

II. *Brittle, and easily fusible.*

1. Bismuth,
2. Antimony,
3. Tellurium,
4. Arsenic.

III. *Brittle, and difficultly fusible.*

1. Cobalt,
2. Manganese,
3. Chronium,
4. Molybdenum,
5. Uranium,
6. Tungsten.

IV. *Refractory.*

1. Titanium,
2. Columbium,
3. Cerium.

Besides the metals arranged in this table, there are a number of others lately discovered, which are the bases of some of the earths, and the two fixed alkalis. If the whole of the earths, as well as the two fixed alkalis, have metallic bases, the number of metals to be added to the above will be thirteen. Those from potash, soda, barytes, strontian, zinc, and magnesia, have already been obtained, and have been named potassium, sodium, barium, strontium, calcium, and magnesium. The first four of these appear to be malleable metals ; the others are not sufficiently known.

The ductility of some metals is so great, as to admit of being drawn into wires much finer than a hair. Gold, although the most laminable of all the metals, or which may be made into the thinnest leaves, does not admit of being drawn into the smallest wire, owing to its want of hardness.

Iron, possessing greater hardness with a considerable portion of that property by which the particles of bodies attract each other in all situations equally, is capable of being drawn into finer wires than gold. Indeed, pure gold is less ductile than when it contains a certain portion of copper.

As metals have a strong texture in their metalline form, so they preserve their natural colours durable, unless corroded or dissolved by particular menstruums, after which their solutions strike particular durable colours, or afford the strongest stains.

Iron dissolved in stale small beer gives the beautiful yellow, and different shades of buff colour, used in printing cottons, linens, &c. When sublimed with sal-ammoniac, it also affords a yellow; and the common iron-moulds made by ink are owing to the iron dissolved in the copperas of which ink is made.

Copper melted with zinc appears of a gold colour; dissolved in aqua-fortis, it affords a beautiful green; and in any alkali, a beautiful blue. And these solutions may be reduced to dry colours by crystallisation or evaporation; and the same metal precipitated out of aqua-fortis with common salts, gives the turquoise colour to white glass. Tin, a white or colourless metal, affords a light blue colour when fluxed with antimony or nitre; the same metal is necessary in striking the scarlet dye with aqua-fortis and cochineal; and its calx, by strong infusion, turns to a glass of an opal colour.

Lead, corroded by the fumes of vinegar, gives the fine white ceruss; burned in a strong naked fire, it becomes the strong red-lead, or minium; and melted into a glass with sand, is of the hyacinth colour.

Silver, being dissolved in aqua-fortis, if chalk be put to the solution, turns of a beautiful purple or amethyst colour; and its own solution, though pale as water, durably stains the nails, skin, or hair, brown or black.

Quicksilver, mixed with brimstone, makes a black mass; and this, by sublimation, affords the beautiful red pigment called cinnabar, or vermilion; and the solution of silver being precipitated with common salt, yields a snow-white powder, which also turns black by being mixed with sulphur.

Gold, dissolved in aqua-regia, affords a fine yellow liquor, which stains animal substances beautifully purple; and if the solution be sufficiently weakened with water, and mixed with a solution of tin, a fine red or purple powder may be procured, very useful for staining of glass and pastes to a beautiful red.

IV SORTS of Roman soldiers called a LEGION.

The Roman legions consisted of four sorts of soldiers, who differed in their ages, arms, and names: they were called, *velites*, *hastati*, *principes*, and *triarii*. The legions were formed of such of the Roman youths as were able to bear arms: their numbers varied under their different commanders.

In the time of Romulus, the institution of these corps, each legion consisted of 3000 foot and 300 equites, or horse: these were divided into three bodies, each body having ten companies, or manipules: each body had two general officers to command it, called tribunes, and each manipuli two centurions. The legions were the most considerable part of the Roman army: their number in the time of Augustus was thirty-three, composed entirely of Roman citizens.

The standard borne by the legions was various; at first a wolf, afterwards a hog, and sometimes a Minotaur, to remind their generals that their designs were to be kept secret and inaccessible as the Minotaur of the Labyrinth. Marius was the first who exchanged their standards for eagles.

The Thundering Legion was a legion in the Roman army consisting of Christian soldiers, who, in the expedition of the emperor Marcus Aurelius Antonius, against the Sarmatæ, Quadi, and Marcomanni, A.D. 174, are said to have saved the whole army, then ready to perish with thirst, by procuring with their prayers a very plentiful shower on them; and at the same time a furious hail, mixed with lightning and thunderbolts, on the enemy, and thus obtained a decisive victory.

This is the account commonly given by ecclesiastical historians; and the whole story is engraven in bas-relievos on the Antonine Column. Hence arose the denomination *thunderers*.

IV CELEBRATED LABYRINTHS. There is mention made of four celebrated labyrinths; viz. the Cretan, Egyptian, Lemnian, and Italian.

That of Crete is most famed: it was built, according to Pliny, by Dædalus, by command of king Minos, who kept the Minotaur shut up in it, on the model of that of Egypt, but on a smaller scale.

The Labyrinth of Egypt was the oldest of all; and was standing in Pliny's time, having been built 4600 years. It consisted of twelve large contiguous palaces, in which the twelve kings of Egypt assembled to transact affairs of state and religion, containing 3000 apartments, 1500 of which were under ground.

The Labyrinth of Lemnos was supported by columns of great beauty: there were remains of it in Pliny's time.

That of Italy was built by Porsenna, king of Etruria, for his tomb, and is the most magnificent example of Tuscan architecture.

IV RIVERS of EDEN. Moses describes the garden of Eden, or Paradise, as being situated on a single channel, which out of Eden was parted into four heads or rivers, called Pison, Gihon, Hiddekel, and Perath, or Euphrates.

It has been imagined, that the " garden of Eden" was the original of those curious gardens which the princes of the East caused to be made, and by which they would represent this delightful spot. Such was that golden garden, valued at 500 talents, which Aristobulus, king of the Jews, presented to Pompey; and which Pompey afterwards carried in triumph, and consecrated to Jupiter in the Capitol. It has been also apprehended, that the conformity between the words " garden of Eden" and " garden of Adon," seems to shew, that to the garden of Eden was owing the rise of those gardens consecrated to Adonis, which the Greeks, Egyptians, and the Assyrians planted in earthen vessels and silver baskets, for the purpose of adorning their houses, and which they carried about in their processions. Hence it has likewise been supposed, that the poets formed their " fortunate islands," the " Elysian fields," the " meadows of Pluto," and the gardens of the Hesperides, of Jupiter, and of Alcinous, as well as those of Adonis.

IV DIVISIONS of the ROMAN CITIZENS, called TRIBES. The Roman people were at first only divided into three tribes by Romulus; the first tribe consisted of the Albans, the second of the Sabines, and the third of a mixture of fugitives, who sought an asylum at Rome. But Servius Tullius divided the inhabitants into four quarters or tribes; and by reason of the great number of citizens that had retired into the country, he composed twenty-six other tribes, making the number of them thirty. In after-times they amounted to thirty-five. The names of the tribes were: 1. the Palatina; 2. the Suburrana; 3. the Collina; 4. the Esquilina; 5. the Romilia; 6. the Æmilia; 7. the Crustumina; 8. the Cornelia; 9. the Fabia; 10. the Galeria; 11. the Lemonia; 12. the Mentian, or Menenia; 13. the Ocriculana; 14. the Papiria; 15. the Pollia; 16. the Popilia; 17. the Pupinia; 18. the Sergia; 19. the Veientina; 20. the Voltinia; 21. the Claudia; 22. the Stellatina; 23. the Tromentina; 24. the Arnensis; 25. the Sabatina; 26. the Pomptina; 27. the Publilia; 28. the Mæcia; 29. the Scaptia; 30. the Oufentina; 31. the Falerina; 32. the Amensis; 33. the Terentina; 34. the Velina; 35. the Quirina.

IV ORDERS of REPTILES. The comparative anatomists divide reptiles into four orders.

First, the *Chelonian order;* testudines. Body enclosed in a bony shell, supported on four limbs, terminated by a tail.

Second, the *Saurian order*, or lizard kind. They have firm bones, like those of the mammalia. The skin is furnished with numerous plates or scales. Body elongated, and ending in a tail. Some are quadruped; others biped, having either fore or hind feet.

Third, *Ophidian order;* serpents. They agree with the two former in having firm bones, curved and long ribs, a larynx or trachea, capable of producing a slight hissing. They differ from the preceding orders in having a long, eel-shaped, flexible body, covered with a skin, either furnished with scales or plates, or naked, unprovided with feet, and terminated by a tail often very long.

Fourth, *Batracian order;* frog kind. They resemble the preceding orders in having a tail, excepting the frogs and toads in their perfect state, a trachea or larynx, capable of producing sound. Like Chelonian and Saurian reptiles, they have feet, are quadruped or biped. They all swim; those with long hind legs and no tail leap: the tree-frogs attach themselves to leaves, by round tubercules of their toes; those with four equal limbs, or two only, crawl and swim, but do not leap.

IV Most distinguished ENGLISH ORATORS, The, are Pitt, Fox, Burke, and Sheridan, contemporaries, and flourished in the most eventful period of the history of Europe, *i. e.* during the reign of George III. and the French Revolution.

IV SIZES of STATUES. Statues are usually distinguished into four general kinds. The first are those less than life; of which kind we have several statues of kings and of gods. The second, those equal to the life; which manner the ancients used, at the public expense, to make statues of persons eminent for virtue, learning, or the services they had done. The third, those that exceed the life: those which surpass the life once and a half, were for kings and emperors; and those double the life, for heroes. The fourth kind were those that exceeded the life twice, thrice, or even more; and were called Colossuses.

Dædalus, the son of Upalmus, who lived not only before the siege of Troy, but even before the expedition of the Argonauts, among many other notable contrivances ascribed to him, is said to have been the inventor of statues. And yet it is certain there were statues before him; but it was he who gave them action. Before him, they made them with the feet joined together; he first loosened the feet of his, and gave them the attitudes of people walking or acting. The Phœnicians are said to have been the first who erected statues to the gods.

IV PRINCIPAL MUSICAL INSTRUMENTS used in WARFARE; the *drum* and *fife*, the *trumpet* and the *bugle*.

The Drum is said to be an oriental invention, and brought by the Arabians, or perhaps the Moors, into Spain. However simple the beats of the drum may appear, it is nevertheless only by long practice that perfection can be attained; and then requiring a quick and nimble wrist.

The principal beats in the British service are the *roll*, the *swell*, the *flam*, the *preparation*, the *general*, the *assembly* or assemblez, the *march*, the *ruffle*, the *reveillez*, the *lattoo*, *beat for orders*, the *retreat*, the *troop*, *to arms*.

The FIFE is a wind instrument, particularly intended for military bands: that and the drum are the only instruments many corps have. It has six notes, and furnishes two octaves, from the lowest D in the treble to D in alt. The Swiss first brought this instrument into France, after the battle of Marignan, under Francis I. As the pipe and tabour enliven the dance, the fife and drum animate the soldiers, particularly in the quick step.

The TRUMPET is the most noble of all the portable wind instruments; it is used principally by the cavalry, to direct them in the service. Some Greek historians ascribe its invention to the Tyrrhenians; but others, with greater probability, to the Egyptians. Moses, we read, made two of silver, to be used by the priests (Numbers, x.); and Solomon made two hundred like those of Moses, as Josephus informs us, which proves the antiquity of this instrument. The trumpet was not in use among the Greeks in the Trojan war, though it was in common use in the time of Homer. Before the invention of trumpets, the first signals in the primitive wars were lighted torches. In the 96th Olympiad, before Christ 396, a prize was instituted at the Olympic games for the best performance on the trumpet; and the first person who gained the prize was Timæus of Elis.

In war there are eight principal manners of sounding the trumpet. The first, called the *cavalquet*, used when an army approaches a city, or passes through it in a march. The second, the *bout-sille*, used when the army is to decamp or march; at which time the drums beat a *general*, when the troopers boot, saddle, and get ready. The third is when they sound to horse, when the *assembly* begins to beat; on which the troopers mount, and then to the standard. The fourth is the *charge* in the day of battle. The fifth the *watch*. The sixth is called the *double cavalquet*. The seventh the *chamade*; and the eighth the *retreat*. Besides these, there are various flourishes, voluntaries, &c., used in rejoicings.

THE BUGLE is a small kind of horn used for giving signals to the light infantry when skirmishing.

IV EXTRAORDINARY VENTRILOQUISTS. 1. an English blacksmith; 2. a Frenchman, named St. Gille; 3. Baron de Megen, a German; 4. Louis Brabant, a Frenchman.

VENTRILOQUOUS is a term applied to those who speak inwardly, having a peculiar art of forming speech, by drawing the air into the lungs; so that the voice proceeding out of the thorax, to a bystander seems to come from a distance.

Some faint tracings of the art or faculty of ventriloquism are to be found in the writings of the ancients. M. de la Chapelle, censor-royal at Paris in 1772, who prosecuted very severe inquiries into the nature of ventriloquism, and published a work on the subject, is of opinion, that the responses of many of the oracles were delivered by persons possessing the quality, so very capable of being applied to the purposes of priestcraft and delusion.

From Baron de Mengen's account of himself, and the observations made by M. de la Chapelle, in the frequent examinations he made of St. Gille, it seems, that the factitious voice produced by the ventriloquist is formed in the inner parts of the mouth and throat. The art, according to this author, does not depend on a particular structure or organization of these parts, peculiar to a few individuals, and very rarely occurring, but may be acquired by almost any, ardently desirous of attaining it, and determined to persevere in repeated trials.

IV STAGES (or the METAMORPHOSES) of the SILK-WORM. The bombyx, or silk-worm, is an insect not more remarkable for the precious matter it furnishes for divers stuffs, than for the many forms it assumes before and after its being enveloped in the rich cod or ball which it weaves for itself. From a small egg, about the size of a pin's head, which is its first state, it becomes a worm, or caterpillar, of a whitish colour, inclining to yellow. In this state it feeds on mulberry-leaves, till, being come to maturity, it winds itself up in a silken bag or case, about the size and shape of a pigeon's egg, and becomes metamorphosed into an aurelia. In this state it remains, without any signs of life or motion, till at length it awakes to become a butterfly, after making itself a passage out of its silken sepulchre; and at last, dying indeed, it prepares itself, by an egg which it casts, for a new life, which the warmth of the summer weather assists it in resuming.

As soon as the silk-worm or caterpillar is arrived at the size and strength necessary for beginning his cod, he makes his web; for it is thus they call that slight tissue which is the commencement and ground of this admirable work. This is his first day's employment. On the second he forms his folliculus, or ball, and covers himself almost over with silk. The third day he is quite hid; and the following days he employs himself in thickening and strengthening his ball, always working from one single end, which he never breaks by his own fault; and which is so fine and so long, that those who have examined it attentively, think they speak within compass when they affirm, that each ball contains silk enough to reach the length of six English miles.

In ten days' time the ball is in its perfection; and it is now to be taken down from the branches of the mulberry-trees where the worms have hung it. But this business requires a great deal of attention, for there are some worms more lazy than others; and it is very dangerous waiting till they make themselves a passage, which usually happens about the fifteenth day.

The first, finest, and strongest balls are kept for the breed; the rest are carefully wound. The balls are placed for some time in an oven, moderately hot, or exposed for several days successively, to the greatest heats of the sun, in order to kill the insect; which, without this precaution, would not fail to open itself a way to go and use those new wings abroad which it has acquired within. Ordinarily, they only wind the more perfect balls. Those that are double, or too weak, or too coarse, are laid aside; not as altogether useless, but that, being improper for winding, they are reserved to be drawn out into skeins. The balls are of different colours: the most common are yellow, orange colour, isabella, or flesh colour. There are some also of a sea-green, others of a sulphur colour, and others white; but there is no necessity for separating the colours and shades, to wind them apart, as all these colours are to be lost in the future scouring and preparing of the silk.

The ancients were but little acquainted with the use and manufacture of silk; they took it for the work of a kind of spider or beetle, who spun it out of its entrails, and wound it with its feet about the little branches of trees. It was in the isle of Cos that the art of manufacturing it was first invented; and Pamphila, the daughter of Platis, has the credit of the invention. The discovery was not long unknown to the Romans. Silk was brought them from Serica, where the worm was a native; but so far were they from profiting by the discovery, that they could not be induced to believe that so fine a thread should be the work of a worm. Silk was a very scarce commodity among them for many ages: it was even sold weight for weight with gold; insomuch, that the emperor Aurelian, who died A.D. 275, refused the empress, his wife, a suit of silk, merely on account of its dearness.

Heliogabalus, the emperor, who died A.D. 220, is said by some writers to have been the first person who wore a garment of silk.

It appears by a statute of Henry VI., that there was a company of silk-women in England so early as the year 1455; but these were probably employed in needle-works of silk and thread; and we find that various small works of haberdashery were manufactured here in 1482; but Italy supplied England and all other parts with the broad manufacture till the year 1489. In Spain, indeed, the culture and manufacture of silk seems to have been introduced at an early period, by the Moors.

King James I. several times recommended from the throne, in the most earnest terms, particularly in the year 1608, to plant mulberry-trees, &c. for the propagation of silk-worms, but unhappily without effect: though from experiments it has been ascertained, that the silk-worm thrives and works as well in England as in any other climate. However, towards the latter end of this king's reign, *i. e.* about the year 1620, the broad silk manufacture was introduced into this country, and prosecuted with great vigour and advantage.

The raw silk is imported into England in great quantities from Italy, Flanders, Spain, Portugal, Turkey, the East Indies, and China.

IV SUBSTANCES used in the manufacture of PORCELAIN.

There are two kinds of earths, and as many oils or varnishes, used in the composition of porcelain. The first earth, called *kaolin*, is intermixed with several corpuscles; the second, called *petunse*, is a plain white, but exceedingly fine, and soft to the touch. They are both found in quarries twenty or thirty leagues from King-tetching; and hither these earths, or rather stones, are brought in a number of little barks, incessantly passing up and down the river Jao-tcheou for that purpose.

The oil or varnish which makes the third ingredient in porcelain is a whitish liquid substance, drawn from the hard stone, of which the petunses are formed.

The oil of lime makes the fourth ingredient, the preparation of which is very tedious. They first dissolve large pieces of quick-lime, and reduce it to a powder, by sprinkling water on it; on this powder they lay a couch of dry fern, and on the fern another of the slaked lime, and thus alternately, till they have got a moderate pile; which done, they set fire to the fern. The whole being consumed, they divide the ashes that remain on new couches of dry fern, setting them on fire as before; and this they repeat five or six times successively, or even more, the oil being still the better as the ashes are oftener burnt.

It is not known who was the inventor of porcelain. The Chinese annals, which generally contain every thing in any respect memorable, are perfectly silent about it; nor is more known than that it was invented before the fifth century. The annals of Feou-leam relate, that from the second year of the emperor Tam, about the year of Christ 442, the workers in porcelain of that province had alone furnished the emperors with it.

It is remarkable that the oldest specimen of Chinese porcelain does not differ, in its essential qualities, from the most recently manufactured.

The art of making porcelain, or, as it is in Europe called, the art of pottery, had been long brought to perfection in the East, before it was known in Africa and Europe. It was cultivated by the Egyptians, from whom it descended to the Greeks and Romans. The country most celebrated for this art was the ancient Etruria. Saxony, France, Prussia, and England have all been celebrated for their potteries at Dresden, Seve, Berlin, and Chelsea; but we are indebted to the genius and industry of the late Josias Wedgewood for the perfection to which the art has been brought in England. Before his time, our potteries generally produced nothing but a flimsy fabric, destitute of taste, and scarcely fit for domestic use. In 1763, Mr. Wedgewood obtained a patent for a new species of ware, called queen's ware. He afterwards invented several other species of earthen-ware and porcelain, of which the principal are, a *terra-cotta*, resembling porphyry, granite, Egyptian pebble, and other beautiful stones of the siliceous or crystalline order. 2. *Basaltes*, or *blackware;* a black porcelain biscuit, of nearly the same properties with the natural stone, receiving a high polish, resisting all the acids, and bearing without injury a very strong fire. 3. *White porcelain biscuit;* of a smooth, wax-like appearance, of similar properties with the preceding. 4. *Jasper;* a white porcelain of exquisite beauty, possessing the general properties of basaltes, together with the singular one of receiving through its whole substance, from the admixture of metallic calces, the same colours which those calces give to glass or enamels in fusion; a property possessed by no other porcelain of ancient or modern composition. 5. *Bamboo*, or cane-coloured biscuit porcelain, of the same nature as the white porcelain biscuit. And, 6, a *porcelain biscuit*, remarkable for great hardness, little inferior to that of agate; a property which, together with its resistance to the strongest acids, and its impenetrability to every known liquid, renders it well adapted for the formation of mortars, and many different kinds of chemical vessels.

IV BRANCHES of GEOMETRY. Geometry is divided into four parts, or branches; *planimetry*, *altimetry*, *longimetry*, and *stereometry*.

Geometry is again distinguished into *theoretical* or *speculative*, and *practical*. The first contemplates the properties of continuity, and demonstrates the truth of general propositions, called *theorems*. The second applies those speculations and *theorems* to particular uses in the solution of *problems*.

Strabo asserts, that the Egyptians were the first inventors of geometry, and that the annual inundations of the Nile were the occasion of it; for that river bearing away all the bounds and landmarks of men's estates, and covering the whole face of the country, the people were obliged to distinguish their lands by the consideration of their figure and quantity; and thus, by experience and habit, formed themselves a method or art which was the origin of geometry. A farther contemplation of the draughts of figures of fields thus laid down and plotted in proportion, might naturally enough lead them to the discovery of some of their excellent and wonderful properties.

From Egypt, geometry passed into Greece, being carried thither, as some say, by Thales; where it was much cultivated and improved by himself, Pythagoras, Anaxagoras of Clazomene, Hippocrates of Chios, and Plato, who testified his conviction of the necessity and importance of geometry to the successful study of philosophy by the following inscription on the door of his academy: "Let no one ignorant of geometry enter here." About fifty years after Plato lived Euclid, who collected together all those theorems which had been invented by his predecessors in Egypt and Greece, and digested them into fifteen books, entitled the "Elements of Geometry;" and those propositions which were not satisfactorily proved, he more accurately demonstrated. The next to Euclid, of those ancient writers whose works are extant, is Apollonius Pergæus, who flourished in the time of Ptolemy Euergetes, about two hundred and thirty years before Christ, and about a hundred years after Euclid. The third ancient geometer, whose writings remain, is Archimedes of Syracuse, who was famous-about the same time with Apollonius. Besides these, there were many other ancient geometers to whom the science is indebted.

The Greeks continued their attention to geometry even after they were subdued by the Romans. Whereas the Romans themselves were so little acquainted with this science, even in the most flourishing time after their republic, that they gave the name of mathematicians to those who pursued the chimeras of divination and judiciary astrology.

Geometry made little progress in Europe till the time of Des Cartes, who published his Geometry in 1637. Sir Isaac Newton contributed to the progress of pure geometry by his two treatises, "De Quadratura Curvarum," and "Enumeratio Linearum Tertii Ordinis;" and still farther by his incomparable and immortal work entitled "Philosophiæ Naturalis Principia Mathematica," which will always be considered as the most extensive and successful application of geometry to physics.

The province of geometry is almost infinite: few of our ideas but may be represented to the imagination by lines, upon which they become of geometrical consideration; it being geometry alone that makes comparisons, and finds the relations of lines.

IV DIVISIONS of the ENGLISH LAWS. Sir William Blackstone, in his Commentaries on the Laws of England, observes, that their objects are fourfold. 1. The rights of persons. 2. The rights of things. 3. Private wrongs. 4. Public wrongs.

The Rights of Persons, considered in their natural capacities, are of two sorts, absolute and relative. Absolute, which are such as appertain and belong to particular men, merely as individuals or single persons; relative, which are incident to them as members of society, and standing in various relations to each other.

The absolute rights of man, considered as a free agent, endowed with discernment to know good from evil, and with power of choosing those measures which appear to him to be most desirable, are usually summed up in one general appellation, and denominated the natural liberty of mankind. This natural liberty consists properly in a power of acting as one thinks fit, without any restraint or control, unless by the law of nature; being a right inherent in us by birth, and one of the gifts of God to man at his creation, when he endued him with the faculty of free-will. But every man, when he enters into society, gives up a part of his natural liberty, as the price of so valuable a purchase; and, in consideration of receiving the advantages of mutual commerce, obliges himself to conform to those laws which the community has thought proper to establish. And this species of legal obedience and conformity is infinitely more desirable than the wild and savage liberty which is sacrificed to obtain it. For no man, that considers a moment, would wish to obtain the absolute and uncontrolled power of doing whatever he pleases; the consequence of which is, that every other man would also have the same power; and then there would be no security to individuals in any of the enjoyments of life. Political, therefore, or civil liberty, which is that of a member of society, is no other than natural liberty, so far restrained by human laws, and no farther than is necessary and expedient for the general advantage of the public. Hence we may collect, that the law which restrains a man from doing mischief to his fellow-citizens, though it diminishes the natural, increases the civil liberty of mankind; but that every wanton and causeless restraint of the will of the subject, whether practised by a monarch, a nobility, or a popular assembly, is a degree of tyranny; nay, that even laws themselves, whether made with or without our consent, if they regulate and constrain our conduct in matters of mere indifference, without any good end in view, are regulations destructive of liberty; whereas, if any public advantage can arise from observing such precepts, the control of our private inclinations in one or two particular points will conduce to preserve our general freedom in others of more importance, by supporting that state of society which alone can secure our independence. Thus the statute of king Edward IV., which forbad the fine gentlemen of those times, under the degree of a lord, to wear pikes upon their shoes or boots of more than two inches in length, was a law that savoured of oppression; because, however ridiculous the fashion then in use might appear, the restraining it by peculiar penalties could serve no purpose of common utility. But the statute of Charles II. which prescribes a thing seemingly as indifferent, a dress for the dead, who are all ordered to be buried in woollen, is a law consistent with public liberty; for it encourages the staple-trade, on which, in great measure, depends the universal good of the nation. So that laws, when prudently framed, are by no means subversive, but rather introductive of liberty; for, as Mr. Locke has well observed, where there is no law there is no freedom.

THE RIGHTS of THINGS. In the beginning of the world, we are informed by holy writ, the all-bountiful Creator gave to man "dominion over all the earth; and over the fish of the sea, and over the fowl of the air, and over every living thing that moveth upon the earth." This is the only true and solid foundation of man's dominion over external things, whatever airy metaphysical notions may have been started by fanciful writers upon this subject. The earth, therefore, and all things therein, are the general property of all mankind, exclusive of other beings, from the immediate gift of the Creator. And while the earth continued bare of inhabitants, it is reasonable to suppose that all was in common among them, and that every one took from the public stock to his own use, such things as his immediate necessities required.

These general notions of property were then sufficient to answer all the purposes of human life, and might, perhaps, still have answered them, had it been possible for mankind to have remained in a state of primeval simplicity; as may be collected from the manners of many American nations, when first discovered by the Europeans, and from the ancient method of living among the first Europeans themselves, if we may credit either the memorials of them preserved in the golden age of the poets, or the uniform accounts given by historians of those times. Not that the communion of goods seems ever to have been applicable, even in the earliest ages, to ought but the substance of the thing; nor could it be extended to the use of it. For, by the law of nature and reason, he, who first began to use it, acquired therein a kind of transient property, that lasted so long as he was using it, and no longer; or, to speak with greater precision, the right of possession continued for the same time only that the act of possession lasted. Thus the ground was in common, and no part of it was the permanent property of any man in particular; yet, whoever was in the occupation of any determined spot of it, for rest, for shade, or the like, acquired for the time a sort of ownership, from which it would have been unjust, and contrary to the law of nature, to have driven him by force; but the instant that he quitted the use or occupation of it, another might seize it without injustice. Thus also a vine or other tree might be said to be in common, as all men were equally entitled to its produce; and yet any private individual might gain the sole property of the fruit which he had gathered for his own repast; a doctrine well illustrated by Cicero, who compares the world to a great theatre, which is common to the public; and yet the place which any man has taken is for the time his own.

But when mankind increased in number, craft, and ambition, it became necessary to entertain conceptions of more permanent dominion; and to appropriate to individuals, not the immediate use only, but the very substance of the thing to be used. Otherwise, innumerable tumults must have arisen, and the good order of the world be continually broken and disturbed, while a variety of persons were striving who should get the first occupation of the same thing, or disputing which of them had actually gained it. As human life also grew more and more refined, abundance of conveniences were devised to render it more easy, commodious, and agreeable; as, habitations for shelter and safety, and raiment for warmth and decency. But no man would be at the trouble to provide either so long as he had only an usufructuary property in them, which was to cease the instant that he quitted possession; if, as soon as he walked out of his tent, or pulled off his garment, the next stranger who came by would have a right to inhabit the one and wear the other. In the case of habitations, in particular, it was natural to observe, that even the brute creation, to whom every thing else was in common, maintained a kind of permanent property in their dwellings, especially for the protection of their young; that the birds of the air had nests, and the beasts of the field had caverns, the invasion of which they esteemed a very flagrant injustice, and would sacrifice their lives to preserve them. Hence a property was soon established in every man's house and home-stall, which seem to have been originally mere temporary huts or movable cabins, suited to the design of Providence for more speedily peopling the earth, and suited to the wandering life of their owners, before any extensive property in the soil or ground was established. And there can be no doubt but that moveables of every kind became sooner appropriated than the permanent substantial soil; partly because they were more susceptible of a long occupancy, which might be continued for months together without any sensible interruption, and at length, by usage, ripen into an established right; but principally because few of them could be fit for use till improved and meliorated by the bodily labour of the occupant; which bodily labour, bestowed upon any subject which before lay in common to all men, is universally allowed to give the fairest and most reasonable title to an exclusive property therein.

Private Wrongs. The more effectually to accomplish the redress of private injuries, courts of justice are instituted in every civilised society, in order to protect the weak from the insults of the stronger, by expounding and enforcing those laws by which rights are defined and wrongs prohibited.

This remedy is therefore principally to be sought by application to these courts of justice; that is, by civil suit or action. But as there are certain injuries of such a nature that some of them furnish and others require a more speedy remedy than can be had in the ordinary forms of justice, there is allowed in those cases an extrajudicial or eccentrical kind of remedy, such as the defence of one's self, or the mutual and reciprocal defence of such as stand in the relations of husband and wife, parent and child, master and servant. In these cases, if the party himself, or any of these his relations, be forcibly attacked in his person or property, it is lawful for him to repel force by force, and the breach of the peace which happens is chargeable upon him only who began the affray.

Recaption or reprisal is another species of remedy by the mere act of the party injured. This happens when any one hath deprived another of his property in goods or chattels personal, or wrongfully detains one's wife, child, or servant, in which case, the owner of the goods, and the husband, parent, or master, may lawfully claim and retake them, wherever he happens to find them, so it be not in a riotous manner, or attended with a breach of the peace. The reason for this is obvious, since it may frequently happen, that the owner may have this only opportunity of doing himself justice: his goods may be afterwards conveyed away or destroyed; and his wife, children, or servants concealed or carried away out of his reach, if he had no speedier remedy than the ordinary process of law.

Another species of remedy by the mere act of the party injured is the abatement or removal of nuisances. Whatsoever unlawfully annoys or does damage to another is a nuisance; and such nuisance may be abated, that is, taken away or removed, by the party aggrieved thereby, so that he commits no riot in the doing of it. If a house or wall is erected so near to mine that it stops my ancient lights, which is a private nuisance, I may enter my neighbour's land, and peaceably pull it down. Or if a new gate be erected across the public highway, which is a common nuisance, any of the king's subjects passing by that way may cut it down and destroy it.

By distraining of cattle or goods for non-payment of rent a man is also his own avenger, and this the law allows.

Public Wrongs are crimes and misdemeanors. A crime or misdemeanor is an act committed or omitted in violation of a public law, either forbidding or commanding it. This general definition comprehends both crimes and misdemeanors, which, properly speaking, are mere synonymous terms, though in common usage the word "crimes" is made to denote such offences as are of a deeper and more atrocious dye; while smaller faults, and omissions of less consequence, are comprised under the gentler name of "misdemeanors" only.

As to the power of human punishment, or the right of the temporal legislator to inflict discretionary penalties for crimes and misdemeanors; it is clear, that the right of punishing crimes against the law of nature, as murder and the like, is in a state of mere nature vested in every individual; for it must be vested in somebody, otherwise the laws of nature would be vain and fruitless if none were empowered to put them in execution: and if that power is vested in any one, it must also be vested in all mankind, since all are by nature equal. Whereof the first murderer Cain was so sensible, that we find him expressing his apprehensions that whoever should find him would slay him. In a state of society, this right is transferred from individuals to the sovereign power; whereby men are prevented from being judges in their own causes, which is one of the evils which civil government was intended to remedy. Whatever power, therefore, individuals had of punishing offences against the law of nature, that is now vested in the magistrate alone, who bears the sword of justice, by the consent of the whole community. And to this precedent natural power of individuals must be referred that right, which some have argued to belong to every state, though, in fact, never exercised by any, of punishing not only their own subjects, but also foreign ambassadors, even with death itself, in case they have offended, not indeed against the municipal laws of the country, but against the divine laws of nature, and become liable thereby to forfeit their lives for their guilt.

IV QUARTERS of the GLOBE, Europe, Asia, Africa, and America.

EUROPE.

Although Europe be considerably less in extent than either of the other three grand divisions, it claims, on a variety of accounts, our particular attention. In modern times, it has been the seat of literature and science. In this part of the globe every kind of cultivation and improvement has made most rapid progress; and it has been distinguished, not only by the general temperature of its climate, the fertility of its soil, and the abundance of its productions, but for the wisdom, strength, and courage of its inhabitants, and for the excellence of its government, laws, and religion. The boundaries of Europe were very inaccurately ascertained by the ancient geographers, and the name itself seems to have originated in a small district near the Hellespont. Europe lies chiefly in the temperate zone, north of Africa, and north-west of Asia. Its length, from the rock of Lisbon in the west, to the Uralian mountains in the east, may be about 3300 British miles; and its breadth, from Cape Nord in Danish Lapland, to

Cape Matapan, the southern extremity of Greece, about 2350. The contents in square miles may be stated at at about five millions. On the south, it is bounded by the Mediterranean sea; on the west by the Atlantic, which contains the most remote European islands, the Azores and Iceland. On the north, the boundary is the Arctic Ocean, comprehending the remote isle of Spitzbergen and Novaya Zemlia, or the New Land. On the eastward, the Uralian mountains, a grand natural limit, is admitted as a boundary.

The ancient inhabitants of Europe consisted of Celts in the west and south, Fins in the north-east, and Laps or Laplanders, resembling the Samoieds of Asia, in the farthest north, who enriched their rude language by adopting that of the more civilised Fins. The ancient inhabitants, who seem to have been thinly scattered, were driven towards the west and north by the Scythians or Goths from Asia, whose descendants occupy the greater part of Europe; by the Sarmatians or Sclavonic tribes, also from Asia, the ancestors of the Russians, Poles, &c., and who were accompanied by the Heruli, using what is now called the Lettic speech, to be found in Prussia, Lithuania, Samogitia, Courland, and Livonia, somewhat akin to the Sclavonic language, with various shades of distinction. The colony of Iberi, northern Mauretani, passed into Spain at a very early period; and the later accession of Hungarians and Turks from Asia may likewise be commemorated. Some writers have asserted that this quarter of the globe was anciently more populous than it is now. The opinion does not seem to be well founded, nor will it readily be adopted by those who duly consider the number and magnitude of modern cities, towns, and villages; the abolition of feudal wars; the adoption of a mode of combat less destructive than that which formerly prevailed; the gradual extirpation of superstition, fanaticism, barbarity, and slavery; and the many extensive improvements made in agriculture, by eradicating forests, draining marshes, cultivating wastes, and opening canals of communication in the interior countries. It is generally allowed, that, notwithstanding the ravages of war and emigrations to foreign parts, the population of most European states has been for some time past increasing. The prevalence of the Christian religion throughout Europe, except in some parts of Turkey, has been favourable to knowledge, industry, and civilisation; and it has contributed to constitute the whole of Europe, as it were, into one republic, so that any useful discovery made in one state passes rapidly to the rest. The mutual intercourse between the different states of Europe is very much facilitated by its inland seas as well as navigable rivers and canals. Of the inland seas, the principal are the Mediterranean, the Baltic, and the White Sea. Its other seas are the German, often styled the North Sea, the Irish Sea, and various parts of the Atlantic. The gulfs and bays of Europe are very numerous; among which we may reckon the following, viz. the Bothnian and Finland Gulfs; the Murray Frith, and Frith of Forth, on the east coast of Scotland; the Bay of Biscay, a large inlet of the Atlantic, on the east bounded by France, and on the south by Spain; the gulfs of the Mediterranean, viz. that of Lyons, south of France; that of Genoa, between Corsica and the Genoese republic; the Gulf of Venice, between Italy and Greece; the Gulf of Lepanto, north of the Morea; the Archipelago, between Greece and Asia Minor; the Sea of Marmora, between Europe and Asia; and the Sea of Asoph, on the north coast of the Euxine. The most considerable straits are, that of Waygatz, at the north-east extremity of Europe; the Sound of Elsinore, between the island of Zealand and Sweden; the Little Belt, between Funen and Jutland; the Categat, or entrance into the Baltic; the Strait of Dover, or English Channel, between England and France; the Bristol Channel, between England and Wales; St. George's Channel, between Great Britain and Ireland; Pentland Frith, between Scotland and the Orkney Islands; the Strait of Gibraltar, between Spain and Africa; the Strait of Messina, between Italy and Sicily; the Dardanelles Strait, or south entrance into the Sea of Marmora; the Strait of Constantinople, that forms a communication between the Sea of Marmora and the Euxine; and the Strait of Caffa, between the Euxine and the Sea of Asoph. The most remarkable capes are, North Cape, the extreme point of Lapland; Cape Finisterre, on the north-west coast of Spain; Cape St. Vincent, the south-west extremity of Portugal; and Cape Matapan, the south point of the Morea. Its principal lakes are those of the Onega, Ladoga, and Peipus, in Russia; those of Geneva and Constance, south-west and north of Switzerland; Lago Maggiore, and others, in the northern parts of Italy. The largest rivers are the Volga, Don, and Dwina, in Russia; the Dnieper, on the east border of Poland; the Danube, between Hungary and European Turkey; the Rhine and Elbe, in Germany; the Rhone, in France; the Po and Tiber, in Italy; the Tago, in Spain; the Scheldt and Meuse, in the Netherlands; the Thames and Severn, in England; the Tay, in Scotland; the Shannon in Ireland, &c. &c. The principal chains of mountains are the Carpathian or Krapack mountains, between Poland and Hungary; the Alps, between France, Switzerland, and Italy; the Appenines, in Italy; the Pyrenees, between France and Spain; and the extensive ridge which separates Norway from Sweden. The most distinguished islands are Great Britain and Ireland, the Orkney isles, the Hebrides, Zealand, and Funen, in the Baltic; Iceland, in the North Sea; and in the Mediterranean, Ivica, Majorca, Minorca, Sardinia, Corsica, Sicily, Candia; and the islands of the Archipelago.

ASIA.

Asia is the second in order, though the first inhabited. It is separated from Europe by the Mediterranean, the Archipelago, the Euxine, the Palus Mæotides, or Sea of Asoph, the Don, and the Dwina; from Africa by the Red Sea and the Isthmus of Suez. On the other sides it is surrounded by the Great South Sea. It does not join to America. Its principal parts are, Arabia, Asiatic Turkey, Persia, India, Tartary, Asiatic Russia, China, Japan, the kingdom of Ava, that of Siam, the Island of Ceylon, and the Sonda Islands, whereof the chief are Sumatra, Borneo, Java, Celebes, the Moluccas, the Philippines, and the Maldives. Asia extends in length from the Hellespont to what is called the East Cape; that is, from about the twenty-sixth degree of longitude east from London into the other hemisphere, to near 190 degrees of east longitude, or 170 degrees west from London; being no less than 164 degrees, or (taking the degree at a medial latitude) more than 6500 geographical miles.

From the southern Cape of Malacca to the north-eastern cape, called the Cape of Taimura, which braves the ice of the Arctic Ocean, the breadth extends from about the second degree of northern latitude to about the seventy-seventh, or nearly 4500 geographical miles. If, for the sake of a rude and merely comparative calculation, one-sixth part be added for the difference between the statute and geographical mile, the length of Asia in British miles would be about 7583, and the breadth 5250.

The religions of Asia are various; and the climate admits of every variety, from the equator to the Arctic Sea.

Though Asia cannot vie with Europe in the advantages of inland seas, yet in addition to a share of the Mediterranean, it possesses the Red Sea (the Arabian Sea) and the Gulf of Persia, the Bays of Bengal and Nankin, with other gulfs, which diversify the coasts much more than those of Africa and America, and have doubtless contributed greatly to the civilisation of this celebrated quarter of the globe.

The Red Sea, or the Arabian Gulf of antiquity, constitutes the grand natural division between Asia and Africa; but its advantages have been chiefly felt by the latter, which is entirely destitute of other inland seas; Egypt and Abyssinia, two of the most civilised countries in that division, have derived great benefits from shat famous gulf, which, from the Straits of Babelmandel to Suez, extends about 21° or 1470 British miles, terminating, not in two equal branches, as delineated in old maps, but in an extensive western branch, while the eastern ascends little beyond the parallel of Mount Sinai.

The Persian Gulf is another noted inland sea, about half the length of the former, being the grand receptacle of those celebrated rivers the Euphrates and the Tigris.

The other gulfs do not afford such strong features of what are properly termed inland seas; but the vast extent of Asia contains seas totally detached, and of a different description from any that occur in Europe, or other quarters of the world. Such is the Euxine, and lihewise the Caspian, which extends about ten degrees, or 700 miles in length, and from 100 to 200 in breadth. Strabo and Pliny idly supposed this sea to be a gulf, extending from the Northern Ocean; though Herodotus, many centuries before, had promulgated more correct notions of it. The Caspian, however, seems, at some remote period, to have spread farther to the north, where the deserts are still sandy and saline, and present the same shells that are found in the Caspian; yet that chain of mountains which branches from the west of the Urals to the north of Orenburgh, and reaches to the Volga, must in all ages have restricted the northern bounds of the Caspian. To the east, this remarkable sea, in the opinion of most geographers, extended, in times not very distant, to the Aral. This sea, or lake Aral, a hundred miles eastward of the Caspian, is about 200 miles in length, and about 70 miles in breadth; receiving the river anciently called Iaxartes, more recently the Sirr or Sihon, and the river Gihon, the Oxus of antiquity; both streams of considerable course, flowing from the mountains Belur Tag, or Imaus. The Aral Sea, being surrounded with sandy deserts, has been little explored; but it is salt like the Caspian, having many small saline lakes in its vicinity.

Another remarkable detached sea is the Baikal in Siberia, or Asiatic Russia, extending from about the fifty-first to the fifty-fifth degree of north latitude, being about 350 British miles in length, though its greatest breadth is not above thirty-five. The water is fresh and pellucid, yet of a green or sea tinge, commonly frozen in the latter end of December, and clear of ice in May.

Passing by the other Asiatic seas of inferior note, a few observations may be offered on the remarkable strait that divides Asia from America. This strait, which was discovered by Behring, and afterwards by Captain Cook, is about thirteen leagues, or near forty miles in breadth. Behring actually passed this strait in 1728, probably in the usual fogs of the climate, without discovering land to the east; but our great navigator gave the name of that Danish adventurer to these straits when he afterwards explored them with his usual accuracy. On the Asiatic shore is the East cape, and on the American that called Prince of Wales. The depth of water in the strait is from twelve to thirty fathoms. To the north of these straits the Asiatic shore tends rapidly to the west; while the American proceeds nearly in a northern direction, till, at the distance of about four or five degrees, the continents are joined by solid and impenetrable bonds of ice.

In the Asiatic seas are numerous shoals or sand-banks; but few of them have been described as conducive to human industry.

The chief rivers of Asia are Kianku and Hoang Ho, the Sena, the Yenisey, and the Oby; streams which rival, in the length of their course, any others on the globe. Next in consequence are the Amoor, and the Makaung of Laos, if the course be rightly delineated, the Sampoo or Burram-pooter, and the Ganges; compared with all which, the Euphrates and Indus are but moderate streams.

The Asiatic mountains are reputed not to equal the European in height. The Uralian chain forms one of the boundaries of Europe; and the Altaian ridge may be classed among the most extensive of the globe, reaching from about the seventieth to the hundred and fortieth degree of longitude east from London, or about 5000 miles, thus rivalling in length the Andes of South America. But as chains of mountains rarely receive uniform appellations, except from nations highly civilised, the Altaian chain, beyond the sources of the Yenisey, is called the mountains of Sayansk; and from the south of the sea Baikal, the Yablonny mountains, branches whereof extend even to the mountains of Tshuktshi, or extreme boundaries of Asia. The chain of Alak may perhaps be regarded as a part of the Altaian, branching to the south; while the Taurus, now known by various names in different countries, was by the ancients considered as a range of great length, reaching from the Cape Kelidoni, on the west of the gulf of Satalia, through Arminia, even to India; this last chain, however, has not impressed travellers with the same idea of its extent. To the south of the Altaian range extends the elevated desert Goby, or Shamo, running in a parallel direction from east to west; and the high region of Thibet may be included in this central prominence of Asia. Other considerable ranges of mountains are Bogdo, Khangay, Belur, those of Thibet, the eastern and western Gauts of Hindoostan, and the Caucasian chain, between the Euxine and the Caspian.

The Asiatic governments are almost universally despotic, and the very idea of a commonwealth seems utterly unknown to that quarter of the world. The mildest systems are perhaps those found in Arabia.

AFRICA.

Africa, called by the ancients Libya, was divided by them into Africa *propria,* and Africa *interior.* Africa propria, or the territory of Carthage, has had various limits assigned to it by ancient geographers. Mela and Ptolemy comprehend under this appellation all the countries situated between the river Ampsaga and the borders of Cyrenaica, which, according to Pliny, were inhabited by twenty-six different nations; and thus they would include Numidia and the Regio Syrtica, which are countries distinct from the proper territory of Carthage. Its true limits seem to have been the river Tusca, or boundary of Numidia, on the west; the Mediterranean, or African Sea, on the north; the frontiers of the Garamantes and deserts of Libya interior on the south; and the Mediterranean and the Lesser Syrtis on the east.

Africa *interior* comprehended those remoter and more southern countries of Africa, most of which were little known to the Greeks and Romans otherwise than by uncertain and fabulous report. The western part of this division was called *Libya interior,* and it was chiefly inhabited by the Gætuli, Garamantes, Nigritæ, and Hesperian Ethiopians. The eastern part was denominated by Ptolemy Æthiopia sub Ægypto.

Africa was first peopled principally by Ham and his descendants. Mizraim peopled Egypt; the Pathrusim the Naphtalim the Casluhim; and the Ludim took possession of other parts; though their respective situations are not precisely known.

Africa, as it is described by modern geographers, is a large peninsula, connected with Asia by the Isthmus of Suez; bounded on the north by the Mediterranean, which separates it from Europe; on the east by the above-named isthmus, the Red Sea, and the Indian Ocean, which divides it from Asia; on the south by the Southern Ocean; and on the west by the Atlantic, which separates it from America; and extending from Cape Bona, in the

Mediterranean, to the Cape of Good Hope, about 4980 miles; and from Cape Verd to Cape Guardafin, near the Straits of Babelmandel, about 4790 miles. Its figure is that of a triangle or pyramid, whose base is the northern part, reaching along the Mediterranean, from the mouth of the Nile to the Straits of Gibraltar, and its vertex the Cape of Good Hope; but the sides, extending along the Atlantic to the west, and the Red Sea or Indian Ocean to the east, are very irregular. As the equator passes nearly through the middle of the country, the greatest part of it lies within the tropics; and therefore the heat, augmented by the reflection of the sandy soil of the interior parts, is hardly tolerable to any besides the natives. Those parts, however, that lie near the coasts or in valleys, and on the banks of the rivers, are very fertile and productive; and the country in general is capable of great improvement by cultivation. Its situation for commerce is preferable to that of any other quarter of the globe, as it has a more easy communication with Europe, Asia, and America, than either of these has with the rest. Its coast is opposite to that of Europe for almost 1000 miles from east to west; and the distance of one from the other is nowhere 100 leagues, and in some places not more than 20 leagues. It is separated from Asia only by the Red Sea, for a considerable interval from north to south, and their distance is from five leagues to 50; it also fronts the southern coast of Asia, though at a greater distance; and it is adapted for commerce by the interposition of islands from Madagascar to Malabar, and by the alternation of the trade-winds. Its coast, for 2000 miles, lies opposite to America and the western islands, at a distance of from 500 to 700 leagues. Besides, it has many large and navigable rivers, which intersect the country in various directions, and form a communication between the internal parts and the surrounding ocean; and its harbours are very numerous and commodious, and capable of being rendered secure by fortifications. The principal rivers of Africa are the Nile, Niger, Morocco, Gambia, Senegal, Sierra-Leona, Benin, Congo, Zaire, Wanza, Bravahul, Rio del Spirito Santo, Kuneni, Macumbo, Lorenzo, Sabla, Kuama, or Zambese, Coavo, Zebee, and Magadoxa.

The mountains of Africa are the Atlas; the mountains of the Moon; the mountains of Sierra Leone; the mountains of Crystal, near the lake of Zaflan, so called from their mines of that beautiful mineral, and those of saltpetre, stretching eastward from the kingdom of Congo; the Pico-franco, running through the middle of Caffraria and part of the country of the Hottentots; the Table Mountain at the Cape of Good Hope, so called from its square figure; and other mountains of Abyssinia.

The interior parts of Africa are inhabited, according to Mr. Park's report, by three distinct races of men; viz. the Mandingoes, or proper negroes, native children of Nigritia; the Foulahs, or white Æthiopians of Ptolemy and Pliny, who have neither the crisped hair, the thick lips, nor jetty blackness of the Mandingoes; and the Moors, natives of Arabia, who in their persons and complexions exactly resemble the Mulattoes of our West-Indies, and who are devoted followers of Mahomet, and the most intolerant, perfidious, and sanguinary of the human race. Though these three nations are frequently intermixed, yet the negroes, whether Mandingoes or Foulahs, generally inhabit to the south of the Moors. The negroes are for the most part husbandmen; the Moors, like their Arabian ancestors, are roving shepherds or wandering merchants, who seem from the earliest time to have overspread the habitable parts of the great African desert, and the oases, or fertile islands, thinly scattered through that sandy ocean. Hence they extended their arms southwards, and made themselves masters of several of the negro kingdoms on the Niger; so that their dominions form a narrow belt running from west to east on the skirts of the desert, from the Atlantic coast to the mountains of Abyssinia. The common boundary of the Moors and negroes forms a striking feature in the moral as well as in the political and physical geography of Africa.

AMERICA.

America, called the New World, or the West Indies, is the fourth quarter of the globe, bordered by the ocean, discovered by Christopher Columbus, a Genoese, in 1492, and denominated America from Americus Vesputius, a Florentine, who landed in 1497 on that part of the continent situated to the south of the equator; after which it fell principally under the dominion of the Spaniards, the English, the French, the Portuguese, and the Dutch. It is divided into north and south by the gulf of Mexico and the straits of Panama. North America, as far as it is known, extends from the 11th degree of latitude, or 7° 30′, as marked in the map of Lacruz, to the 75th, or, as others state it, to the 72d. Its principal countries are Mexico, California, Louisiana, Virginia, Canada, Newfoundland, the islands of Cuba, St. Domingo, and the Antilles. South America reaches from the 12th degree of north to the 60th degree of south latitude, or, if the strait of Magalhaens be the limit, to the 54th: its countries are Terra Firma, Peru, Paraguay, Chili, Terra Magellanica, the Brazils, and the country of the Amazons. America in length, from north latitude 72° to south lattitude 54°, comprehends 126°, or 7560 geographical miles, or in British miles about 8800. The greatest breadth of South America, from Cape Blanco west, to that of St. Roque east, is 48°, or 2880 geographical miles; but in the north, from the promontory of Alaska to the most eastern point of Labrador, or even of Greenland, a third part must be added. Supposing the breadth of North America to be 3840 geographical miles, the average breadth will be about 3360 geographical miles, or nearly 4000 British miles. This extensive continent lies between the Pacific Ocean on the west, and the Atlantic on the east, and is said to contain upwards of fourteen millions of square miles.

South America.—The climate of Terra Firma, especially in the northern parts, is extremely hot and sultry during the whole year. From the month of May to the end of November, the season, called by the inhabitants winter, is almost a continual succession of thunder, rain, and tempests; the clouds precipitating the rain with such impetuosity, that the low lands exhibit the appearance of an ocean. Great part of the country is of consequence almost continually flooded; and this, together with the excessive heat, so impregnates the air with vapours, that in many provinces, particularly about Papayan and Portobello, it is extremely unwholesome.

From the situation of Peru, which is within the torrid zone, one would suppose it to be uninhabitable; but the Andes, those lofty mountains, being on one side, and the

South Sea on the other, it is not so prodigiously hot as tropical countries in general are; and in some parts it is disagreeably cold. In one part are mountains of a stupendous height and magnitude, having their summits covered with snow; on the other, volcanoes flaming within, while their tops, chasms, and apertures are involved in ice. The plains are temperate, the beaches and valleys hot; and, lastly, according to the disposition of the country, its high or low situation, we find all the various gradations of temperature between the extremes of heat and cold. It is remarkable that in some places it never rains, a defect that is supplied by a dew that falls every night, and sufficiently refreshes the vegetable creation; but in Quito they have prodigious rains, attended by dreadful storms of thunder and lightning. In the inland parts of Peru, and by the banks of the rivers, the soil is usually very fertile; but along the sea-coast it is a barren sand.

The climate of Chili is one of the most delightful in the world, being a medium between the intense heats of the torrid and the piercing colds of the frigid zones. Along the coast of the Pacific Ocean they enjoy a fine temperate air and a clear and serene sky most part of the year; but sometimes the winds that blow from the mountains in winter are exceedingly sharp.

Some parts of Paraguay, situated as it is, must be extremely hot, by reason of the almost vertical influence of the solar rays; which districts must be pleasant and delightful.

The climate of Brazil is temperate and mild compared with that of Africa, owing chiefly to the refreshing wind which blows continually from the sea. The air is not only cool, but chilly through the night, and the natives kindle a fire every evening in their huts. As the rivers in this country overflow their banks, leaving a sort of slime upon the lands, the soil is in consequence amazingly rich.

The air of Amazonia is cooler than might be expected, considering it is situated in the torrid zone. This is partly owing to the heavy rains, which occasion the rivers to overflow for one half of the year, and partly to the haziness of the weather, which obscures the sun great part of the time he is above the horizon. During the rainy season the country is subject to dreadful storms of thunder and lightning.

The climate is said to be much colder in Patagonia than in the north, under the same parallels of latitude; a circumstance ascribed to its being in the vicinity of the Andes, which cross it, and are covered with eternal snow.

North America, bounded on the east by the Atlantic, and on the west by the Pacific Ocean, extends on the south to the vicinity of Panama; the province of Veragua being universally considered as part of North America. According to the maps of Lopez, a chain of mountains runs north and south, called Sierras de Canatagua, and terminates in the point of Higuero, which dividing the provinces of Panama and Veragua, forms a natural boundary between North and South America.

IV SEASONS, or cardinal divisions of the year. SPRING, SUMMER, AUTUMN, and WINTER.

The spring quarter commences, in the northern part of the world, on the day the sun enters the first degree of Aries, which is about the 21st day of March, and ends when the sun leaves Gemini. Its end coincides with the beginning of summer.

The summer quarter commences on the day the sun enters Cancer, and ends when he quits Virgo.

The autumnal quarter begins on the day when the sun's meridian distance from the zenith, being on the decrease, is a mean between the greatest and the least; or when the sun enters Libra, about the 22d day of September.

Many nations have computed the year by autumns; the Anglo-Saxons by winters. The ancient Germans were acquainted with all the other seasons of the year, but had no notion of autumn.

Autumn has always been reputed an unhealthy season.

The winter quarter commences on the day when the sun's distance from the zenith of the place is the greatest, and ends on the day when its distance is at a mean between the greatest and the least.

Under the equator, the winter, as well as the other seasons, returns twice a year; but all other places have only one winter in the year; which, in the northern hemisphere, begins when the sun is in the tropic of Capricorn; and in the southern hemisphere, when in the tropic of Cancer; so that all places in the same hemisphere have their winter at the same time.

IV KINDS of BEDS of the ANCIENT ROMANS, called the *lectus cubicularis*, *lectus discubitorius*, *lectus lucubratorius*, and *lectus funebris*, or *emortualis*.

The lectus cubicularis was a chamber-bed whereon they slept; their table-bed, or lectus discubitorius, whereon they ate (for they always ate lying, or in a recumbent posture), there being usually three persons to one bed, whereof the middle place was accounted the most honourable as well as the middle bed. These beds were unknown before the second Punic war: the Romans till then sat down to eat on plain wooden benches, in imitation of the heroes of Homer, or after the manner of the Lacedemonians and Cretans. An innovation in this practice is ascribed to Scipio Africanus, who brought from Carthage some of those little beds called "Punicani," which were of wood, very low, stuffed only with hay or straw, and covered with the skins of sheep or goats. The youths who had not put on the *togo virilis* were kept to the ancient discipline. When they were admitted to table, they only sat on the edge of the beds of their nearest relations. Never, says Suetonius, did the young Cæsars, Cacus and Lucius, eat at the table of Augustus. From the greatest simplicity, the Romans, by degrees, carried their dining-beds to the most surprising magnificence; they were commonly covered over with plates of silver, adorned with the softest mats and the richest counterpanes. Lampridius, speaking of Heliogabalus, says, that he had beds of solid silver; and Pompey, in his third triumph, introduced beds of gold. They had also their lectus lucubratorius, on which they studied; and a lectus funebris, or emortualis, on which the dead were carried to the pile.

IV WINDS. North, south, east, and west; in heathen mythology called Bóreas, Aúster, Eúrus, and Zéphyrus.

IV SONS of HAM. Ham, the youngest son of Noah, had four sons, viz. Cush, Mizraim, Phut, and Canaan.

Ham, having behaved irreverently towards his father, was cursed by him, in the line of Canaan and his posterity—"Cursed be Canaan; a servant of servants shall he be unto his brethren," Gen. ix. 25. Ham is supposed to have peopled Africa, and to have dwelt in Egypt, the most fruitful part of that country. Africa is called the land of Ham in several passages of the Psalms.

LES CINQ.

V ORDERS of ARCHITECTURE, called the Tuscan, Doric, Ionic, Corinthian, and Composite. Of these five, three are called Grecian, viz. the Doric, Ionic, and Corinthian; and two Latin, the Tuscan and the Composite.

The Tuscan and Doric orders are more massy and less adorned than the Ionic; the Corinthian and Composite richer and more slender; the Ionic holds the middle, as well in its proportions as its ornaments.

It is the common opinion, that the first fabric that was made according to any of the orders was the temple which king Dorus built in honour of Juno in the city of Argos: hence it obtained the name of the Doric order.

The Ionians built many temples upon the model of that erected by Dorus in Greece; but, changing some of the proportions and ornaments of the columns, gave it the name of the Ionic order, according to which they built a temple in honour of Diana. The reason of this was, that as the temple was dedicated to a deity which they represented under the shape of a young lady, they made their columns more tapering, the better to represent the airy form of the goddess, and adorned it more delicately, adding bases which represented the buskined ornaments of the legs and feet according to the fashion of that time, and made the channelings (or flutes) deeper, in imitation of the folds and plaits of a light garment; they put likewise volutes or scrolls upon the capital, pretending that they imitated the head-dress of a girl, whose hair, beautifully descending from the top of her head, was folded up under each ear.

The Corinthian order is said to have been invented by Calemachus, an Athenian sculptor. The idea of the capital was taken from a basket of flowers covered with a tile which had been accidentally left upon the grave of a young Corinthian lady. The basket happened to be placed on the root of an acanthus. The plant thus depressed, its leaves and stalks spread around the basket nearly like, but less formal, than the manner in which they are now placed, the tile forming the abacus, or crown.

The Tuscan and Composite cannot fairly be called original orders; the former being nearly a copy of the Doric, without its beautiful proportions, and the latter a compound of the Ionic and Corinthian.

Sir William Chambers, in his treatise on Civil Architecture, divides each order into two principal members, the column and the entablature; each of which is composed of three principal parts. Those of the column are the base, the shaft, and the capital; and those of the entablature are the architrave, frieze, and cornice.

Besides columns and pilasters, it is sometimes customary to employ representations of the human figure to support entablatures in buildings. The male figures are called Persians, Telamones, or Atlantides; and the females Carians, or Caryatides. The origin of this custom, Vitruvius tells us, is as follows:—

The inhabitants of Caria, a city of the Peloponnesus, having joined the Persians in a war against the rest of the Greeks, and that war being terminated by the defeat of the Persians, the Greeks declared war against the Caryates, took their city, demolished it, put all the males to the sword, carried all the females into captivity; and, to treat them with the greater ignominy, forbade the ladies to divest themselves of their robes, or any of their ornaments, that so they might not only be once led in triumph, but, in a manner, suffer the shame of it all their lives after, by appearing constantly in the same dress as on the day of triumph; and further, as an everlasting testimony of the punishment inflicted on the Caryates, and to inform posterity what had been the nature of their chastisement, the architects of that time, instead of columns, employed the representations of these women to support the entablatures in their public buildings. The Lacedemonians did the same thing after the battle of Platea; erecting with the spoils taken from the enemy a gallery, which they called Persian, wherein statues, in the form of captive Persians in their usual dresses, supported the vault, intending thereby to punish that nation in such a manner as its pride had merited, and leave to posterity a monument of the valour and victories of the Lacedemonians.

The five sorts of fabrics in architecture, are the picnostyle, systyle, diastyle, ariostyle, eustyle.

The picnostyle is an intercolumniation, where the columns are placed at the space of a diameter and a half (of the column) from each other.

The systyle, two diameters apart; the diastyle, three; the ariostyle hath no certain proportion given, but generally four diameters; and the eustyle, which is considered the most convenient proportion of all the columns, are two diameters apart, except the centre space, which is generally three diameters.

The history of architecture would require a much greater space than can be allowed in the compass of this volume; as it is, however, an art so immediately connected, not only with the elegancies of life, but the common necessaries; and as it is at this moment beginning to receive in England the encouragement it so justly deserves, we shall endeavour to trace some of its leading features.

Æschylus, in his tragedy, after enumerating many other benefits conferred on mankind by Prometheus (who is supposed to have lived 1600 years B.C.), says, he taught them to construct houses with brick and timber; for till then they knew nothing of building, but dwelt in holes and caverns. This personage (like many others to whom the invention of useful arts is attributed) is probably no more than factitious; or perhaps the Greeks might design, by this appellation, to preserve the character when they had forgotten the names of their benefactors.

The progress of improvement in Grecian architecture appears to have occupied a period of about three centuries, from the age of Solon and Pythagoras, beginning with the year before Christ 600, when the temples of Jupiter at Olympia, and in the Capitol of Rome, those at Samos, Priene, Ephesus, and Magnesia, were begun, to the time when, under the administration of Pericles, the ornamental style of Grecian architecture attained its utmost beauty and perfection, in the temple of Minerva, in the Acropolis of Athens, built after the model of Jupiter at Olympia; and finally concluding this first period with the completion of the temple of Diana at Ephesus, in the time of Alexander, which, as Pliny informs us, had been 220 years in building.

About the same time that Grecian architecture was rising to eminence, the Tuscans, by whose name one of the orders is distinguished, began to signalise themselves in Italy by their superior skill in building. The tomb of Porsenna, king of Etruria, is recorded as a wonderful but idle specimen of their art. Their works at Rome were less ostentatious, but more important and useful. In that city they were employed in constructing its walls of hewn stone, and in raising its Capitol. The Tarquins, in whose reigns the works were undertaken, were of Tuscan origin.

Their connexion with Greece afterwards introduced the Romans to the knowledge of a more elegant style of architecture; and long before Vitruvius composed his treatise, they could boast of many good architects, and some authors on the subject. Of these, Cossulius was one of the earliest and most eminent.

Augustus distinguished himself by his love for building. It was his boast, that he had left a city of marble which he had found of brick. Instigated by his example, and with a desire to pay him court, his relations, his wealthy subjects, the governors of his provinces, princes tributary or allied to him, all engaged in some enterprise of architecture; and the general tranquillity of his reign was favourable to their operations; so that not only in Rome and Italy, but also in the rest of his wide empire, grand and sumptuous edifices were erected. The colonies, too, which he sent out diffused a knowledge of their architecture in the countries where they settled; and Spain, Africa, and Germany exhibited to their rude inhabitants many fabrics in the Greek and Roman style.

But none that courted the favour of Augustus by extensive and costly buildings could, in that respect, be compared with Herod the Great, king of Judea. The architectural designs of this monarch were conceived and executed upon a scale which surpassed all others of his age. The rebuilding of the temple of Jerusalem, though a magnificent and wonderful undertaking, which occupied for eight years the labour of ten thousand artificers, was yet but a small part of what he performed: other parts of his dominions were adorned by him, not merely with single edifices, but with entire cities.

Under the reign of Trajan flourished Apollodorus, a native of Damascus, who by his eminent talents recommended himself to the patronage of that emperor. Under his direction was constructed the celebrated bridge over the Danube; a work surpassing, in its kind, every thing that the architecture of Greece or Rome had produced. He executed many other considerable buildings, which were esteemed the best of their age; and in all the noble edifices that were raised by Trajan he was employed or consulted. The stately column in Rome, which is yet standing entire, and distinguished by the name of Trajan's pillar, is a monument of the abilities of Apollodorus. But while he enjoyed the favour of the reigning emperor, he neglected to ingratiate himself with the presumptive heir. Adrian was not only fond of architecture, but also made some pretensions to a skill in that science, which, it is reported, Apollodorus was so imprudent as to ridicule. When the empire devolved to Adrian, he built, after a design of his own, a temple dedicated to Rome and Virtue, whose statues, in a sitting posture, were placed within the cell. After the fabric was completed, he sent a representation of it to Apollodorus, as a tacit vindication of his architectural skill, and a proof of what he was able to perform. If the emperor was a bad architect, the architect certainly was no good courtier; for, upon seeing the statues, sitting, as they were, in the temple (which, it seems, wanted much of its due proportion in height), he said, if the goddesses should ever attempt to stand upon their feet, they would assuredly break their heads against the ceiling. For this sarcasm upon his disproportioned room the emperor took that unjustifiable revenge into which the excess of power may sometimes betray the mildest characters: Apollodorus was shortly after put to death.

But, notwithstanding this cruelty against the best architect of his time, Adrian encouraged architecture equally with any of his predecessors, and certainly more than all those who succeeded him; nor does antiquity record any person whose buildings are so numerous and so widely spread. Much of his reign was spent in visiting the various provinces of his empire, and throughout all the vast extent he raised monuments of architecture beyond the scale of ordinary edifices. Such, in the south of Egypt, was the city of Antinoopolis; and in the north of England, the wall of defence, eighty miles long, the ruins of which are still called after his name. He rebuilt, or repaired, various ancient cities. Athens was particularly distinguished by his liberality; where he at length completed the temple of Olympian Jupiter: more than 600 years had elapsed since the commencement of that renowned fabric. His villa at Tivoli (the extensive ruins of which are beheld with surprise) was the private retreat of this emperor; where he had combined, it is said, the different styles of architecture of every country he had visited.

The period of the Antonines, that golden age of Rome, produced some good works in architecture, of which the column yet standing, commonly called Antonine's, is one example. Several succeeding emperors, as Severus, Alexander, and particularly Dioclesian, engaged in building, and encouraged that art, which however speedily declined; and with the erection of the vast palace of the last-mentioned prince, at Spalatro, may be placed the final corruption of good architecture in the western empire.

Brunelleschi, born in 1377, may be regarded as the founder of modern architecture; next, Alberti, whose great reputation acquired him the title of the modern Vitruvius. Bramenti, following their example in the sedulous study of the remains of antiquity, restored to architecture the taste and beauty which had been so long absent from her works. To this artist was entrusted the rebuilding of the basilica of St. Peter, on a plan of unequalled magnificence, in 1513; and it is to be lamented that he did not possess the practice as well as the theory of his art; as the works, which he began with such careless rapidity, have been almost obliterated by his successors. This vast undertaking was carried on by Raphael, San Gallo, and Michael Angelo, to whom the final design of the edifice is due.

Under the great names of Vignola, Serlio, Palladio, and Scamozzi, architecture continued to flourish in the sixteenth century; and with the name of Bernini closes the list of good Italian architects in the seventeenth century.

Pierre Lescot was the first French architect who abandoned the Gothic for the revived antique style. He lived in the beginning of the sixteenth century.

Mansart was the chief architect of Louis XIV., and executed the principal works of that magnificent reign — the palace at Versailles, and the church of the Invalids.

The façade of the Louvre was the work of Claude Perrault, who distinguished himself by several other buildings.

Inigo Jones may be regarded as the greatest as well as the earliest English architect. To him we are indebted for the introduction of the ancient and pure style, when what was called Gothic architecture had declined in England. His most esteemed works are the Banqueting-house at Whitehall, and Covent-Garden church.

It might have been sufficient for the fame of Sir Christopher Wren to have erected St. Paul's cathedral; but numerous other monuments attest his talent and scientific skill. These two distinguished names form the list of English architectural worthies. Many others have pursued the art with great success, but none have attained any historical eminence.

V DIVINITIES, called in mythology APPIADES, because their temples were at Rome, near the frontiers of Appius, viz. Venus, Pallas, Vesta, Concord, and Peace.

V MONUMENTAL COLUMNS.—No. 1. The most celebrated of these is the triumphal column of Trajan at Rome. This monument was built by Apollodorus, the most famous Roman architect, in the Forum Romanum. The height of this column is 106 feet, with a diameter of nearly 13 feet; it is placed on a pedestal of 19 feet high. Upon the capital there is a crowning, which formerly supported a statue of the emperor, but at present a bronze statue of St. Peter, about 14 feet in height. The base and capital are of the Tuscan order. The column with the crowning is composed of 34 tamboons or blocks of white marble, and the shaft is adorned, mounting spirally, with representations of the victories of Trajan over the Dacæ. Four eagles at the corners of the pedestal support in their beaks festoons of laurel, and the sides of the pedestal are richly ornamented with a variety of military weapons. The inside of the column contains a staircase, which ascends to the capital; and as each block of stone forms the whole diameter of the shaft, the steps are wrought out of the solid courses.

No. 2. The Antonine column, though inferior in design and the beauty of sculpture to the last mentioned, is one of the most considerable monuments of ancient Rome. It was erected by Marcus Aurelius, and consecrated by him to Antoninus Pius, whose statue was placed upon the summit: on the shaft are represented the actions of Marcus in the Marconian war. The column is 96½ feet in height, with a diameter of 11½, raised upon a pedestal of 26½ feet. The construction of this column is exactly similar to that of Trajan; its base and capital have Doric profiles.

No. 3. At Alexandria there is a remarkable column, which is commonly called Pompey's Pillar. It is of the Corinthian order, raised upon a short pedestal. The height of the shaft is 67 feet, in one piece of granite, and nearly nine feet in diameter. The whole height of the column and pedestal is about 94 feet.

No. 4. At Constantinople there were two triumphal columns similar to those of Trajan and Antoninus. The column of Constantine is entirely destroyed; and of the other, erected to Arcadius by Theodosius, the pedestal and the first course of the shaft is all that remains.

No. 5. The Monument of London may be mentioned as the largest column in existence, being 15 feet in diameter, and 202 feet high, including the pedestal and crowning. This column was erected in memorial of the great fire of London by Sir Christopher Wren.

V SENSES, The, are *seeing*, *hearing*, *smelling*, *tasting*, and *feeling*; each of them is a miracle of divine power and wisdom.

Pliny observes, that of all the senses, feeling and tasting are those which man enjoys in the greatest perfection. As to seeing, he says, he is excelled by the eagle, &c.; as to smelling, by the vulture; and as to hearing, by the mole, even when hid under ground. Grimaldi says, that some women of Megara were able by their eyes alone to distinguish between eggs laid by black hens and those by white ones.

V GYMNASTIC EXERCISES. The five gymnastic exercises so much celebrated by all the writers of antiquity, and so accurately described by Homer, Pindar, Sophocles, and Pausanias, began, first, with the foot-race, which is supposed to have been the most ancient, and which always retained the prerogative of distinguishing the Olympiads by the name of the victorious racer. At first this exercise consisted in running naked from one end of the stadium to the other. The course was afterwards doubled, and at length the competitors were required to pass the goal three, six, and even twelve times, before they could be entitled to the prize. The reward of the victors was a simple wreath of wild olive. Motives of utility introduced the race of men loaded with heavy armour, which rendered this exercise a contest of strength as well as swiftness.

The second trial of agility consisted in leaping, the competitors endeavouring to surpass each other in the length, without regard to the height of their leaps. They carried in their hands weights of lead, through the perforations of which their fingers passed as through the handles of a shield, and by these they poised and impelled forward their bodies. The perfection attained in this exercise must have far exceeded the experience of modern times, if we may believe what Pausanias says of Phaulos of Crotona, that he leaped 52 feet.

Third. The wrestling of the ancients required equal strength and agility. It was chiefly remarkable on account of the oil and sand with which they rubbed their bodies, in order to supple their joints, to prevent excessive perspiration, and to elude the grasp of their antagonists. The wrestlers were matched by lot, and the prize was adjudged to him who had twice thrown his adversary on the ground. Eurybalus was the first who received the wrestler's crown.

Fourth. These exercises tried chiefly the strength of the arms: the first consisted in throwing a huge mass of polished iron, brass, or stone, of a circular form, resembling a shield, but without handle or thong. It was called the disk, and thrown under the hand, as the quoit is in England. The object of the competitors was, to surpass each other in the length of the cast. Akin to this, was the art of darting the javelin, which, as that weapon was darted at a mark, required steadiness of eye as well as dexterity of hand.

Fifth. The last of the gymnastic exercises, both in order and estimation, was that of boxing. It was sometimes performed by the naked fist, and sometimes by the formidable cæstus, composed of raw hides lined with metal. Before the victory could be decided, it was necessary, from the nature of that exercise, that one of the combatants should acknowledge his defeat; a condition which seemed so inconsistent with Grecian valour, that few ventured to contend in this dangerous amusement. The laws of Sparta absolutely prohibited her citizens from ever engaging in it, because a Spartan was taught to disdain saving his life by yielding to an opponent. These were the five gymnastic exercises; but besides these simple sports, there were two others formed of their various combination; the "pancratium," which consisted of wrestling and boxing, and the "pentathlon," in which all the five were united.

V DOCTRINES of MINERALOGY. This comprehensive branch of knowledge is by Werner divided into five distinct doctrines; viz. 1. Oryctognosy, or that part of mineralogy which, with the assistance of well-ascertained characters and fixed denominations, teaches us to determine fossil substances, and to arrange them according to their natural affinities. 2. Geognosy, which has for its object the structure, relative position, and formation of those substances of which the crust of the earth is composed. 3. Mineralogical Geography, which exhibits in geographical order the species of rocks that occur in different countries, together with the various species of minerals contained in them, and the circumstances under which they occur. 4. Mineralogical Chemistry, which makes us acquainted with the various chemical properties of minerals, and with the quality and quantity of their component parts. 5. Economical Mineralogy, in which mineral substances are considered merely with a view to the use to which they are applicable, which also determines their arrangement.

V AMPHIBIOUS QUADRUPEDS, The, are the *Otter*, the *Beaver*, the *Seal*, the *Morse*, and the *Manati.*

V GREAT OCEANS, The, are the Northern, the Pacific, the Southern, the Indian, and the Atlantic.

V CONQUESTS of ENGLAND. England has been conquered by five different nations. 1. By the Britons, a people of Gaul; 2. by the Romans under Julius Cæsar; 3. by the Saxons under Hengist; 4. by the Danes under Canute; 5. by the Normans under William.

V BOOKS of the BIBLE, called the Pentateuch; viz. Genesis, Exodus, Leviticus, Numbers, and Deuteronomy, written by Moses in the land of Moab, a year before his death.

V YEARS a LUSTRUM, one of the periods by which the Romans reckoned.

V PRINCIPAL RULES of ARITHMETIC, The, are Numeration, Addition, Subtraction, Multiplication, and Division; and these are the foundation of all arithmetical operations.

The Greeks were the first European people among whom arithmetic arrived at any great degree of perfection, and they made use of the letters of the alphabet to represent their numbers. The Romans followed a like method, and besides characters for each rank of classes, they introduced others for five, fifty, and five hundred. Their method is still used for distinguishing the chapters of books, and for some other purposes. From the Romans arithmetic came to us; but the common arithmetic amongst us, which makes use of the ten Arabic figures 1, 2, 3, 4, 5, 6, 7, 8, 9, 0, was utterly unknown to the Greeks and Romans, and came into Europe from the Arabians, by way of Spain. The Arabians are said to have received them from the Indians.

V GOOD ROMAN EMPERORS, The, who reigned successively after the cruel tyrant Domitian, were Cocceius, Nerva, Trajan, Adrian, Titus Antonius, and Marcus Aurelius, who, though left sole successor to the throne, took Lucius Verus as his associate and equal in governing the state.

V EPHORI. Magistrates established in ancient Sparta, to balance and check the power and authority of the kings.

The ephori were five in number, and annually chosen by the people out of their own body. The ephori did not rise up at the entrance of the kings, as all other magistrates did; and even if the kings offended against the laws, the ephori took cognisance of their conduct, and punished them.

V CLASSES of JESUITS. This religious order was founded by Ignatius Loyola, a Biscayan.

This order, which was the most political and best regulated of all the monastic orders, and from which mankind have derived more good and evil than from any other of the religious fraternities, has become conspicuous by its missions to the Indies, and by its other employments relating to the study of science and the education of youth

The Jesuits had no particular habit, but changed and accommodated it to times and occasions.

The order consisted of five different classes; *professed fathers*, *spiritual coadjutors*, *approved scholars*, *lay-brothers*, called also *temporal coadjutors* and *novices*.

The *professed fathers*, which made the body of the company, took the three solemn vows of religion publicly, and to these added a special vow of obedience to the head of the church, as to what regards missions among idolaters, heretics, &c. The *spiritual coadjutors* also made public vows of chastity, poverty, and obedience; but omitted the fourth, relating to missions. *Approved scholars* were those who, after two years' noviciate, had been admitted, and had made their vows of religion; not solemn, indeed, but yet declared. These were in the way to become professed or spiritual coadjutors, according as the general thought fit. These degrees, especially that of professed, were never conferred till after two years' noviciate, and seven years' study, seven of regency, a third year of noviciate, and thirty-three years of age; the age at which our Saviour is supposed to have been crucified. The vows of the scholars were absolute on their side, but only conditional on the side of the order; the general having it in his power to dispense with them.

V GLACIERS of SAVOY. Large tracts of ice among the Alps, blended with the highest cultivation. They stretch towards the plains of Chamouny, and unite at the foot of Mont Blanc; they are called Tacona, Bossors, Montanvert, Argentiere, and Tour.

V VOWELS in the English language, a, e, i, o, u, and sometimes w and y.

V SORTS of Adjectives, proper, common, numeral, pronominal, and compound.

V MOODS in VERBS. Indicative, imperative, potential, subjunctive, and infinitive.

V CLASSES or GRADATIONS of DRUIDS.

The Druids are said to have been a tribe of the ancient Celts, who migrated from the Danube towards the more westerly parts of Europe; and to have settled in Gaul and Britain at a very early period. Very little is known of them before the time of Cæsar; but it is universally acknowledged that the British Druids, at that time, were very famous, both at home and abroad, for their wisdom and learning, as well as for their probity; and that they were held in high estimation as teachers of religion and philosophy.

It does not appear how widely they were dispersed through Britain and the adjacent isles; but it is well known that their chief settlement was in the isle of Anglesey, the ancient Mona; which they probably selected as being well stored with groves of their favourite oak.

The Druids were divided into five classes or orders, all subject to one head, or Arch-druid, elected from their own body, who was the high-priest, or "Pontiff Maximus," in all matters of religion, and the supreme judge in all civil causes; viz. the vacerri, bardi, eubages, semnothii, and saronidæ. The vacerri are held to have been the priests; the bardi, the poets; the eubages, the augurs; and the saronidæ, the civil judges and instructors of youth. The semnothii, who are said to have been immediately devoted to the service of religion, were probably the same as the vacerri.

The worship of the ancient Britons was expressed in four different ways, and consisted of songs of praise and thanksgivings, prayers and supplications, offerings and sacrifices, and the various rights of augury and divination. The Druids directed and superintended these modes of worship, and aided their disciples in the performance of them. The hours of their daily sacrifices were at noon and midnight, when they imagined that the gods visited their sacred groves. At noon they paid their homage to the Sun and the celestial gods; and at midnight, to the moon and the infernal powers. Pliny, speaking of their religious solemnities, says, that they were observed on the sixth day of the moon. The reason of their choosing that day is, because the moon by that time is strong enough, though not arrived at half its fulness.

Their great annual festival, and that which was observed with the greatest devotion, was the august solemnity of cutting the misletoe from the oak, which was performed by the Arch-druid; and it is thus described by Pliny: "When they have got every thing in readiness under the oak for the sacrifice and the banquet, they begin by tying two white bulls to it by the horns; then one of the Druids, clothed in white, mounts the tree, and with a knife of gold cuts the misletoe, which is received in a white sagum: this done, they proceed to their sacrifices and feasting." This festival is said to have been kept as near to the 10th of March as the age of the moon permitted, that being their new-year's-day.

In the Druidical creed it was an article, "that it was unlawful to build temples to the gods, or to worship them within walls, or under roofs." All their places of worship were therefore in the open air, and generally on eminences, from whence they had a full view of the heavenly bodies, to whom much of their adoration was directed. But to prevent their being incommoded by winds and rains, or being distracted by the view of external objects, or being disturbed by unhallowed feet, they selected the deepest recesses of the groves and woods. They had so high an esteem and veneration for the oak, that they never performed the least religious ceremony without being adorned with garlands of its leaves. They believed that every thing which grew upon that tree came from heaven, and that God had preferred that tree above all others.

These sacred groves were watered by some consecrated fountain or river. In the centre of the grove was a circular area, enclosed within one or two rows of large stones, set perpendicularly in the earth, which constituted the temple, where the altar for their sacrifices was placed. In some of these temples they laid stones of prodigious weight on the tops of the standing pillars, which formed a kind of circle aloft in the air, and added much grandeur; such was Stone-Henge, if it was a Druidical temple. Near to the temple, they erected their carnedde, or sacred mounts; their cromlechs, or stone tables, on which they prepared their sacrifices, and other things necessary to their worship. Of these temples, carnedde, and cromlechs, there are still many vestiges in the British isles.

At the period of the first invasion of Britain by Julius Cæsar, B. C. 55, the Druids were in the zenith of their power and glory; but as the Romans gained ground in the island, their power declined, until it was nearly destroyed. These victorious people every where discovered a great animosity against the persons and religion of the Druids; depriving them of all authority in civil matters, and showing them no mercy where they found them transgressing the laws, or concerned in any revolt.

Suetonius Paulinus, the governor of Britain under Nero, A. D. 61, observing that the isle of Anglesey was the great seat of disaffection to the Roman government, and the asylum of all who were forming plots against it, conducted his army thither, defeated the Britons, and made a very cruel use of his victory. Not satisfied with cutting down their sacred groves, demolishing their temples, and overturning their altars, he burned many of these people in the fires which they had themselves kindled for sacrificing the Roman prisoners, if they had gained the victory. So many Druids perished on this occasion, and in the unfortunate revolt of the Britons, under Boadicea, queen of the Iceni, which happened soon after, that they were never able to make any considerable figure after this period in South Britain. Some fled into Caledonia and Ireland, where they maintained their authority and superstition for some time longer.

V DEGREES of NOBILITY in England, called the peerage; *viz.* Duke, Marquess, Earl, Viscount, and Baron.

Nobility in England is only conferred by the king, and that by writ or patent, in virtue whereof it becomes hereditary. In other countries, there are other ways of acquiring it. Among the Romans, the nobles were either those raised to the magistrature or descended from magistrates: there was no such thing as nobility by patent.

The Venetian noblesse is famous: in the noblesse the sovereignty of the state exists. It is divided into three classes.

The first comprehends only twenty-four families.

The second includes the descendants of all those who were entered in the golden book in 1289, and destined to govern the state, which then began to be aristocratic.

The third consists of such as have bought the dignity of noble Venetians.

V ZONES; one torrid, two temperate, and two frigid: each line upon the globe has its distinct name, and the several spaces included by these lines are also particularly distinguished. The space between the two tropics, which is 47° in breadth, is called the torrid zone, because the sun, being always over some part of it, makes it exceedingly hot. The spaces between the tropics and the polar circles, on each side of the equator, 43° each in breadth, are called the two temperate zones; for in them the heat is moderate, the sun never coming over the heads of the inhabitants. The regions from the polar circles to the poles, extending in each direction 43½°, are within the two frigid zones, so called on account of the extreme cold, and ice being always found there.

V EMINENT MEANS to improve the MIND, The, are, Observation, Reading, Instruction by Lectures, Conversation, and Meditation.

Observation is the notice we take of all occurrences in human life, whether they be sensible or intellectual, whether relating to persons or things, to ourselves or others. It is this which furnishes us, even from our infancy, with a rich variety of ideas and propositions, words and phrases; it is by this we know that fire will burn, that the sun gives light, that a horse eats grass, that an acorn produces an oak, that man is a being capable of reasoning and discoursing, that our judgment is weak, that our mistakes are many, that our sorrows are great, that our bodies die and are carried to the grave, and that one generation succeeds another. All these things, which we perceive by sense or consciousness, or which we know in a direct manner, with scarce any exercise of our reflecting or reasoning faculties and powers, may be included under the general name of observation. When this observation relates to any thing that immediately concerns ourselves, or of which we are conscious, it may be called experience; thus, that we have in ourselves a power of thinking, fearing, loving, &c.; that we have appetites and passions working within us, and that many personal occurrences have attended us in this life.

Observation, therefore, includes all that Mr. Locke means by sensation and reflection.

When we are searching out the native properties of any being by various methods of trial, or when we apply some active powers, or set some causes at work, to observe what effect they could produce, this sort of observation is called *experiment*. So when we throw a bullet into water, we find it sinks; and when we throw this same bullet into quicksilver, we see it swims: but if we beat out this bullet into a thin hollow shape, like a dish, it will swim in water too: when we strike two flints together, they produce fire.

Second, *reading*, whereby we acquaint ourselves with what other men have written. The arts of reading and writing are of infinite advantage; for by them we are made partakers of the sentiments, observation, reasoning, and improvements of all the learned world, in the most remote nations, and in former ages, almost from the beginning of mankind.

Third, public or private *lectures;* such verbal instructions as are given by teachers, while the pupils attend in silence. This is the way of learning religion from the pulpit, philosophy or theology from the professor's chair, or mathematics, by a teacher showing us various theorems or problems, i. e. speculations or practices by demonstrations and operations, with all the instruments of art necessary to those operations.

Fourth, *conversation.* Another method of improving our minds; wherein, by mutual inquiry, we learn the sentiments of others, as well as communicate our own. Under this head we may also rank disputes of various kinds.

Fifth, *meditation* or *study;* which includes all those exercises of the mind whereby we render all the former methods useful for our increase of true knowledge and wisdom. It is by meditation we fix on our memory whatsoever we learn, and form our judgment of the truth or falsehood, strength or weakness, of what others speak or write. It is meditation or study that draws out long chains of arguments, and finds deep and difficult truths which before lay concealed in darkness.

V DISTINGUISHING ARTICLES of the CALVINISTS.

First, that God had chosen a certain number in Christ to everlasting happiness and glory, before the foundation of the world, according to his immutable purpose and his free grace and love, without the least foresight of faith, good works, or any conditions performed by the creature; and that the rest of mankind he was pleased to pass by, and ordain them to dishonour and wrath.

Second, that Jesus, by his death and sufferings, made atonement only for the sins of the elect.

Third, that mankind are totally depraved, in consequence of the fall; and by virtue of Adam's being their public head, the guilt of his sin was imputed, and a corrupt nature conveyed to all his posterity, from which proceed all actual transgression; and that by sin we are made subject to death, and all miseries temporal, spiritual, and eternal.

Fourth, that all whom God has predestinated to life, he is pleased, in his appointed time, effectually to call by his word and Spirit out of that state of sin and death (in which they are by nature) to grace and salvation by Jesus Christ.

Fifth, that those whom God has effectually called and sanctified by his Spirit shall never finally fall from a state of grace.

V REGULAR BODIES, called also PLATONIC BODIES, are solids, terminated on all sides by regular and equal planes, and whose solid angles are all equal.

The regular bodies are five in number; viz. the *cube*, which consists of six equal squares; the *tetrahedron*, or regular triangular pyramid, having four equal triangular faces; the *octahedron*, having eight; the *dodecahedron*, having twelve pentagonal faces; and the *icosahedron*, having twenty triangular faces. Besides these five, there can be no other regular bodies in nature.

CINQUE PORTS, The, are five havens that lie on the coast of England towards France; thus called by way of eminence, on account of their superior importance, as having been thought by our kings to merit a particular regard for their preservation against invasions.

Hence they have a particular policy, and are governed by a keeper, with the title of lord-warden of the Cinque Ports, which office belongs to the constable of Dover; and their representatives are called barons of the Cinque Ports. They have various franchises, similar in many respects to those of the counties palatine.

William the Conqueror first appointed a warden of the Cinque Ports; but king John first granted them their privileges, and that upon condition that they should provide eighty ships at their own charge for forty days as often as the king should have occasion in the wars, he being then straitened for a navy to recover Normandy.

These five ports are Dover, Hastings, Romney, Hythe, and Sandwich. Hastings is the chief of the Cinque Ports, and is memorable in the annals of English history for the battle fought there between William duke of Normandy and Harold II. king of England, on the 14th of October, 1066. The Norman invader had landed his soldiers, horses, stores, &c. at Pevensey, on the coast of Sussex, on the 29th of September; and after constructing a fort there for the protection of his fleet, marched his army to Hastings, where the whole continued to be actively employed in fortifying an encampment, collecting provisions, and making other preparations for self-defence and military operations. At the arrival of William in England, his adversary, Harold, was seated with his army at York, but marched from that city as soon as he was apprised of the event, and proceeded, without halting, to the Sussex coast. By rapid marches, desertion, &c., his force was considerably diminished; but in spite of such disadvantages, he very imprudently and unwisely resolved to risk a battle the next day after his arrival, on the downs near Hastings. Both armies were drawn up in regular lines; and both prepared for a stubborn contest and decided issue. The English were all on foot, armed with swords, spears, and battle-axes, and formed themselves into one deep and compact body; in the centre of which the king, with his brothers Gurth and Leoswin, placed themselves with the royal standard. The Normans formed in two lines, the first composed of archers and slingers, and the second of heavy-armed troops; whilst the cavalry, commanded by the ambitious invader, were stationed in the rear and at the wings. On a signal given, the Normans rushed forward, and discharged a shower of arrows on their opponents; and the English not only sustained the first assault, but retaliated with equal vigour and obstinacy. The conflict was desperate and sanguinary: whilst one party was irresistibly impelled by the prospect of gaining a country, or losing life, the other was determined to risk the latter in defence of their homes, their families, and friends. The Normans, however, being superior in numbers, with the advantages of cavalry, site of ground, and vigour of troops, after a whole day's fight completely conquered the English. The slaughter was great, and the victory complete. Harold, his two brothers, and many of the English officers were slain, and the remaining troops dispersed. Some historians assert, that no less than 15,000 Normans fell on the field of battle, and a larger number of their adversaries. This, however, seems a little exaggerated. In obtaining this victory, William secured an easy passage to the throne; and after resting and refreshing his army for a few days, marched towards London. In this journey he had to encounter some impediments; but in a short time he reached the capital, and was elected to the English throne.

V DISTINGUISHING properties of the MAGNET. The most distinguishing properties of the magnet, whether natural or artificial, are, that it attracts iron, and other ferruginous substances, thus serving the purposes of the chemist in discovering or separating small particles of iron mixed with other matters; and that it points towards the poles of the world; that it is endued in certain cases with attractive and repelling powers; and in other circumstances also dips or inclines to a point beneath the horizon, directly under the pole; and that it communicates these properties, by proper methods, to iron, steel, and other ferruginous substances. On which foundations are formed the mariner's needles, both the horizontal and the inclinatory or dipping needles.

The magnet or loadstone is an iron ore, from which a considerable portion of iron may be extracted, and is usually found in iron mines, and sometimes in very large pieces, half magnet, half common ore.

The properties possessed by the natural magnet may be communicated to iron, steel, and other ferruginous substances: the bodies after having acquired the magnetical properties are called artificial magnets.

The attractive power of the magnet was known to the ancients, and is mentioned even by Homer, Pythagoras, Aristotle, and by Plato and Euripides, who call it the *Herculean stone,* because it commands iron, which subdues every thing else.

V SORTS of AUGURIES mentioned by the ancients. Augury, or the practice of consulting the gods, and learning their will, by divers kinds of omens, is very ancient; they are mentioned as having been prohibited by Moses, in Leviticus. The cup put into Benjamin's sack in Egypt is said to have been that used by Joseph for making auguries.

In this absurd superstition the ancients had great faith. The five sorts are thus described: 1. From the appearances in the heavens, as thunder, lightning, and other meteors. 2. From birds, whence they derived the name of Auspices. Some birds furnished them with observations from their chattering and singing, others from their flying. The former were called Oscines, and the latter Præpetes. For the taking of both these sorts of auguries, the augur went up to some high place, took the augural staff with him, bent at one end like a crosier, and marked out with it the four templa, or quarters of the heavens. Then he turned to the east, and in that situation waited for the omen, which was of no signification unless it was confirmed by another of the same sort. In this manner, Romulus perceived Jupiter's approbation of his election to the crown; having seen lightning that came out on his left side, and proceeded to his right. This ceremony was also observed when Numa was called to the crown. 3. From birds kept in a coop for that purpose. The manner of divining from them was as follows: early in the morning, the augur that was to take the observation, after having commanded a general silence, ordered the coop to be opened, and then threw in a handful of crums or corn. If the chickens did not eat greedily, scattered the food about with their wings, let fall a great deal of it from their mouths to the ground, or, above all, refused to eat, the omen was reckoned unlucky, and some great mischief portended; but if they fed greedily, and let none of the food drop out of their mouths, they obtained all desirable assurance of happiness and success. This sort of augury was called *tripudium*, from the ancient Latin word *pavire*, to *strike*, and *terra*, the *earth;* because the birds in eating greedily struck the ground with their beaks. The story of P. Claudius the consul is well known, who, ready to engage at sea in the first Punic war, and hearing that the chickens would not come out of the coop, ordered them to be thrown into the sea, with this jest, "that if they will not eat, let them drink." But he was vanquished; not, it will be thought, by the contempt of this silly and childish ceremony, but in consequence of his own rashness. 4. The next sort of augury was from beasts, viz. wolves, goats, foxes, heifers, asses, rams, hares, weasels, and mice. The general observations about them were, whether they appeared in a strange place, or crossed the way; whether they ran to the right or left, &c. 5. The last sort of divination by auguries was from what they called diræ, or unusual accidents happening to any person, as tumbling, seeing apparitions, hearing strange voices, persons spilling salt on the table, meeting a wolf, fox, a hare, &c. Many curious circumstances of Roman superstition, with respect to omens and other things, are enumerated by Pliny; and among the Greeks, by Pausanias. Cæsar, in landing at Adrumetum in Africa with his army, happened to fall on his face, which was reckoned a bad omen; but he, with great presence of mind, turned it to his own advantage, for, taking hold of the ground with his right hand, and kissing it, as if he had fallen on purpose, he exclaimed, "Teneo te, Africa," "I take possession of thee, O Africa."

V SORTS of WHIRLWINDS distinguished by peculiar names; as, the PRESTER, TYPHO, TURBO, EXHYDRIA, and ECNEPHIAS.

The **PRESTER** is a violent wind breaking forth with flashes of lightning. This is rarely observed; scarcely ever without the *ecnephias*. Seneca says it is a *typho* or *turbo*, kindled or ignited in the air.

The ECNEPHIAS is a sudden and impetuous wind, breaking out of some cloud; frequent in the Ethiopic Sea, particularly about the Cape of Good Hope: the seamen call them *travados*.

The EXHYDRIA is a wind bursting out of a cloud, with a great quantity of water. This only seems to differ in degree from the *ecnephias*, which is frequently attended with showers.

A TYPHO or VORTEX, most properly called a *whirlwind* or *hurricane*, is an impetuous wind, turning rapidly every way, and sweeping all round the place. It frequently descends from on high. The Indians call it *Orancan;* the Turks, &c. *oliphant.* It is frequent in the Eastern Ocean, chiefly about Siam, China, &c., and renders the navigation of those parts exceedingly dangerous.

Dr. Franklin supposes a whirlwind and a water-spout to proceed from the same cause; the only difference being that the latter passes over the water, and the former over the land. This opinion is corroborated by the observations of M. de la Pryme and many others, who have remarked the appearances and effects of both to be the same. They have both a progression as well as a circular motion; they generally rise after calms and great heats, and occur most frequently in the warmer latitudes: the wind blows every way from a large surrounding space, both to the water-spout and whirlwind; and a water-spout has by its progressive motion passed from the sea to the land, and produced all the phenomena and effects of a whirlwind; so that there is no reason to doubt of their being meteors arising from the same general cause, and explicable upon the same principles furnished by electrical experiments and discoveries.

In Pliny's time, the seamen used to pour vinegar into the sea to assuage and lay the spout, when it approached them: our modern seamen think to keep it off by making a noise with filing and scratching violently on the deck, or by discharging great guns to disperse it.

V SONS of SHEM. Shem, the second son of Noah, had five sons; viz. Elam, Asshur, Arphaxad, Lud, and Aram. From these five sons of Shem came the Persians, the Syrians, the Hebrews, &c.

LES SIX.

VI VARIETIES of the HUMAN RACE. The human race, though springing from one parent stock, is divided into six distinct varieties. I. The Laplanders, Esquimaux Indians, Samoied Tartars, the inhabitants of Nova Zembla, the Borandians, the Greenlanders, and the Kamschadales. II. The Tartars, Chinese, and Japanese, Cochin-Chinese, Siamese, Tonquinese, and the natives of Arracan, Laos, and Pegu. III. The southern Asiatics. To this class the Persians and Arabians may be referred. IV. The African Negroes. V. Aboriginal Americans. VI. The Europeans, and those of European origin; among whom may be classed the Georgians, Circassians, and Mingrelians; the natives of Asia Minor, and those of the northern part of Africa; with those countries which lie north-west of the Caspian Sea.

VI CLASSES of BIRDS. Linnæus divides all the birds into six classes; viz. Accipitres, or the *rapacious* kind; Picæ, or the pie kind; Gallina, or the poultry kind; Passeres, or the sparrow kind; Anceres, or the duck kind; and Grallai, or the crane kind. The four first comprehend the various kinds of land birds; the two last, those that belong to the water.

Land birds may be distinguished from water-fowl by the legs and toes. All land birds have their toes divided, without any membrane between them, and their legs and feet serve the purposes of running, grasping, or climbing. On the other hand, water-fowl have their legs and feet formed for wading in the water, or swimming on its surface. In those that wade, the legs are usually long and naked; in those that swim, the toes are webbed together.

VI SORTS of PRONOUNS. The six sorts of pronouns are,

Personal,
Possessive,
Relative,
Demonstrative,
Definitive, and
Distributive.

The three last are often called Pronominal Adjectives.

The personal pronouns are,

Nom. sing.	Objec.	Nom. plur.	Objec.
I	me	we	us.
thou	thee	ye *or* you	you.
mas. he	him	they	them.
fem. she	her		

The possessive pronouns are,

My, thy, his, her, its, our, your, their.

The relative pronouns refer to some noun used in the former part of the same section, and are *who, which, that. Who* is declined thus:

Nom.	Possessive.	Objective.
Who	Whose	Whom.
Whoever	Whosoever	Whomsoever.

The demonstrative pronouns are,

Singular.	Plural.
This	These.
That	Those.

The distributive pronouns are,

Each, every, either; they agree with nouns, pronouns, and verbs of the singular number only.

The definitive pronouns are,

Any, some, other, none, one.

Self is a substantive, and is united to personal pronouns, as, singular — myself, himself, herself; and to the neuter pronoun *it*, as *itself:* the plural is formed by *selves*.

Ourself is used in the regal style, as in the royal proclamations.

> Ex. "We *ourself* will follow.
>
> SHAKSPEARE.

VI EPOCHS. Epocha is a term or fixed point of time; whence the succeeding years are numbered or accounted.

The epocha of the Christians is the Nativity or Incarnation of Jesus Christ; that of the Mahometans, the Hegira; that of the Jews, the creation of the world; that of the ancient Greeks, the Olympiads; that of the Romans, the building of the city; that of the ancient Persians and Assyrians, the epocha of Nabonassar.

VI CLASSES of ANIMALS, called Zoology.

1. Mammalia; because they suckle their young, and are viviparous.
2. Ornithology. Birds, oviparous.

3. Amphibology. Amphibia, because they can live upon land or in water.

4. Ichthyology. Fishes; three grand divisions, cetaceous, cartilaginous, and spinous.

5. Entomology. Insects: divided into seven orders.

6. Zoophytes, which are a kind of intermediate body, supposed to partake both of the nature of an animal and a vegetable.

VI PRIMITIVE forms of CRYSTALS. Crystallography is the science which treats of the form and structure of crystals. The beautiful symmetrical forms which frequently occur in the deep recesses of mines, or the fissures of alpine rocks, cannot fail to strike the most common observer with surprise. Amidst the almost infinite variety which they present, it will be found, on a more attentive examination, that there are certain definite forms which some minerals most frequently assume, and which are rarely if ever seen in other minerals. Hence we might be led at first to infer, that crystallisation depends on the definite action of some general law, by which the constituent parts of each mineral species are invariably arranged in the same form. When, however, it is farther discovered, that, besides the prevailing forms peculiar to certain minerals, the same species are not unfrequently crystallised in a variety of dissimilar forms, and that minerals of different species often present crystals of the same form, we must retract our first conclusion, and shall be more disposed to believe that the mineral kingdom has not yet emerged from a chaotic state, or that the reign of order is subject to the invasion of disturbing forces, the extent of which we have no means of ascertaining.

The labours of a few enlightened and indefatigable philosophers have recently removed, in a great degree, the obscurity in which this department of science was involved, and have demonstrated that the laws by which the particles of the minutest crystal are arranged act with unerring precision, and are not less regular than those which govern the motions of the planets, or the solar system.

The primitive forms of all crystals which have been hitherto examined are six.

1. The parallelopiped, bounded by six planes, the opposite planes being parallel. This includes the cube and varieties of the rectangular prism, the oblique angular prism and the rhomboid.

2. The octahedron. This is a double four-sided pyramid. When the triangular faces are equilateral, it is called a regular octahedron. There are, besides this, other varieties of the primitive octahedron, in which the pyramids are longer or shorter than the regular one, or have a rhomboidal base, or a rectangular base, longer in one direction than the other.

3. The regular tetrahedron is bounded by four equilateral triangles.

4. The regular hexahedral prism, or equiangular six-sided prism.

5. Rhomboidal dodecahedron, bounded by twelve equal rhombs.

6. The pyramidal dodecahedron, consisting of two six-sided pyramids, joined base to base.

When the laminæ of a crystal divide in any other direction than parallel to its faces, it is called a secondary form, or derivative crystal.

VI COLOURS used as MOURNING. The modes of mourning are as various in various countries as the colours which are used to denote it. In Europe, the ordinary colour is black; in China, white; in Turkey, blue or violet; in Egypt, yellow; in Ethiopia, brown. The ancient Spartan and Roman ladies mourned in white; and the same colour was worn formerly in Castile, on the death of their princes. Kings and cardinals always mourn in purple.

Each people pretend to have their reasons for the particular colour of their mourning: white is supposed to denote purity; yellow, that death is the end of all human hopes, as leaves when they fall, and flowers when they fade, become yellow; brown denotes the earth, whither the dead return; black, the privation of life, as being the privation of light; blue expresses the happiness which it is hoped the deceased enjoy; purple or violet, sorrow on the one side, and hope on the other, as being a mixture of black and blue.

In public mournings at Rome, the shops were shut up, the women laid aside all their ornaments, the senators their laticlavian robes, and the consuls sat in a lower seat than usual.

VI ARTICLES of the REFORMED CHURCH.

The great object of the English reformers was to retain the body and constitution of the primitive church, and to discard such tenets and superstitions as had been introduced by mere human invention. The first principle which the church assumes, as the groundwork of its doctrines and tenets, is, that no article of faith shall be believed by any man, or thought necessary to salvation, which is not contained in those canonical books of the Old and New Testament, of whose authority there never was any doubt in the church.

Secondly, it states the doctrine of a divine Trinity existing in the unity of the Godhead as a scriptural doctrine; and adopts all the other articles of the Athanasian, the Nicene, and the Apostles' Creeds.

Thirdly, it agrees with the Calvinists in admitting the doctrine of original sin, or that corruption which is attached to the nature of man by the transgression of our first parents. It also asserts the justification of man through the atonement and merits of Jesus Christ.

Fourthly, the efficacy and virtue of the divine grace, commonly called the operations of the Holy Ghost, in influencing the wills and affections of mankind, and directing them to the performance of works of faith and righteousness.

Fifthly, it treats of the very difficult and obscure questions relating to predestination and election, with a becoming moderation, and restricts the mercy and favour of God to no particular society of believers.

Sixthly, with respect to sacraments, it admits of only two, Baptism, and the Supper of our Lord; and considers them as outward and visible signs of an inward and spiritual grace, which is the consequence and effect of faith.

VI TENSES in English verbs. Present, imperfect, perfect, pluperfect, first and second future.

VI. PARTS of GRAMMAR. 1. Orthoëpy, which teaches the pronunciation of letters and syllables according to established usage.

2. Orthography, which teaches how words should be spelled.

3. Accidence treats of the modification of the different parts of speech in their relations to one another.

4. Syntax furnishes rules for the proper construction of words in a sentence.

5. Prosody treats of the right accentuation of syllables, and of the different measures of verse.

6. Etymology teaches the derivation of words from their original words, or from other languages.

VI PARTS of PROSODY. Accent, quantity, emphasis, cadence, pauses, and versification.

VI STOPS in GRAMMAR. Comma (,), semicolon (;), colon (:), period (.), interrogatory (?), and exclamatory (!). In the oldest documents, there are no points, nor any intervals between the words: the letters stand close to each other, without any distinction in the text itself: there is only a small space left after the dates, royal signatures, and abbreviations. In 931, some interval between the words was first observed in the court-hand. Punctuation was introduced in the tenth century, but without either colon or comma.

VI RHETORICAL DIVISIONS of a DISCOURSE. Exordium, narrative, proposition, confirmation, refutation, and peroration.

VI SORTS of ARGUMENT. Metaphysical, physical, moral, political, mechanical, and theological.

VI MARKS for ACCENTUATION and Measure. The accute accent (´), the grave accent (`), long (¯), short (˘), the circumflex (ˆ), and the DIÆRESIS (¨), which indicates that the two vowels coming together are not a diphthong, but two distinct syllables.

VI DYNASTIES. Since the Conquest, six dynasties have reigned in England. First, the house of William the Conqueror, of which there were four, viz. :—

William I.
William Rufus,
Henry I.
Stephen of Anjou.

Second, the Plantagenets, of whom there were fourteen, viz. :—

Henry II.
Richard I.
John,
Henry III.
Edward I.
Edward II.
Edward III.
Richard II.
Henry IV.
Henry V.
Henry VI.
Edward IV.
Edward V.
Richard III.

Third, the Tudors, of whom there were five, viz. :—

Henry VII.
Henry VIII.
Edward VI.
Mary,
Elizabeth.

Fourth, the Stuarts, of whom there were six, viz. :—

James I.
Charles I.
Charles II.
James II.
Mary, (married to William of Orange, and reigned conjointly with him.)
Anne.

Fifth, the house of Nassau, only one.

William III., married Mary, daughter of James II. He reigned conjointly with her, and solely after her death.

Sixth, the Guelphs, the present illustrious house of Brunswick, four. viz.

George I.
George II.
George III.
George IV., his present most sacred majesty.

VI PREROGATIVES of a KING, called REGALIA. 1. Power of judicature; 2. Power of life and death: 3. Power of war and peace; 4. Masterless goods.

as waifs, estrays, &c.; 5. Assessments; 6. Minting of money.

VI RATES of SHIPS. The term ship, in the sea language, is applied to such vessels as are furnished with three masts, each of which is composed of a lower mast, topmast, and top gallant mast, with the usual rigging, &c. In the royal navy, the ships are divided into six rates or classes, distinguishable by their sizes and the number of guns they carry.

A *first-rate* carries 110 guns, and has three decks; a *second-rate*, 98 guns, and three decks; *third-rate* include those of 80 and 74 guns, and have two decks; *fourth-rate*, 50 guns, and two decks; *fifth-rate* are frigates, and carry 40 guns, 38 guns, and 36 guns; *sixth-rate*, 22 guns and 18 guns.

The invention of ships is very ancient, and at the same time very uncertain. Mythologists attribute it to Dædalus, and pretend that the wings he invented to save himself withal from the Labyrinth of Crete were nothing but sails, which he first gave to vessels, and with which he eluded the vigilance and pursuit of Minos. Others give the honour to Janus, on the credit of some ancient Greek and Latin coins; on one side of which is represented his double face, and on the reverse a ship. Lastly, others look on Noah to have been the first ship-builder.

The most celebrated ships of antiquity are, that of Ptolemy Philopater, which is said to have been two hundred and eighty cubits (i. e. four hundred and twenty feet) long, thirty-eight broad, and forty-eight high: it carried four thousand rowers, four hundred sailors, and three thousand soldiers. That which the same prince made to sail on the Nile, we are told, was three hundred and twelve feet long, forty-five feet broad, with a mast one hundred and twenty feet high. Yet these were nothing in comparison with Hiero's ship, built under the direction of Archimedes; on the structure of which Moschion, as we are told by Snellius, wrote a whole volume. There was wood enough employed in it to make sixty galleys. It had all the variety of apartments of a palace; banqueting-rooms, galleries, gardens, fish-ponds, stables, mills, baths, &c. It was encompassed with an iron rampart and eight towers, with walls and bulwarks, furnished with machines of war, particularly one, which threw a stone of three hundred pounds, or a dart twelve cubits long, the space of half a mile; with many other particulars related by Athenæus.

VI KINDS of PAPER. *Egyptian*, *European*, and *Chinese* paper, *cotton*-paper, *bark*-paper, and *abestine* or incombustible paper.

To the Egyptians is due the honour of the invention of paper; they made it from a rush called papyrus, or biblus, growing chiefly in Egypt, about the banks of the Nile; it was also found in India; and Guilandinus assures us he saw in Chaldea, at the confluence of the Tigris and Euphrates, large fens, in which, with his own hands, he plucked a papyrus differing in nothing from that of the Nile. Strabo likewise speaks of a sort of papyrus growing in Italy; but we do not find this was ever used for making paper.

Besides paper, they made sails, ropes, and other naval rigging, as also mats, blankets, clothes, and even ships, of the stalks of the papyrus. Moses, we are told, when a child, was exposed on the banks of the Nile, in a basket of papyrus. The Egyptian priests wore shoes of papyrus.

The European paper is made from linen rags, and the chief process consists in separating the fibres of the rags, by grinding them into exceedingly fine and short filaments, which being mixed with water till they make a fine pulp, may be taken up in a very thin and even layer, upon a mould of wire cloth. Now by the draining away of the water through the wire, the filaments are left, interwoven or felted so completely among each other, that they will not separate without breaking, and when dry will make a sheet of paper, the strength and quality of which very much depend upon the materials it is made from, and the equality of length and size to which the filaments are reduced by grinding, which equality alone can cause them to float equally in the water of the pulp, and thus distribute themselves fairly and equally over the wire-mould, when taken up by it. For writing-paper a fine white colour is necessary, and this is obtained either by using the whitest rags by themselves, or by a chemical process of bleaching.

The incalculable advantages which the moderns have derived from the art of printing would have been only imperfectly known, but for the invention of linen-rag paper. A more plentiful and economical substance could not be conceived than the tattered remnants of our clothes, linen worn out, and otherwise incapable of being applied to the least use, and of which the quantity every day increases; nor could a more ready operation be imagined than a few hours' trituration in a mill. It has been observed by a French writer, that the despatch of the processes of paper-making is so great, that five workmen in a mill may furnish sufficient paper for the continual use of 3000 transcribers.

The incombustible paper is made of the lapis asbestos, which will bear burning without being injured. Dr. Bruckman, professor at Brunswick, has published a natural history of the asbestine or incombustible paper, and printed four copies of his book on asbestine.

VI WIVES of HENRY the EIGHTH. 1. Catherine of Arragon; 2. Anne Boleyn; 3. Jane Seymour; 4. Anne of Cleves; 5. Catherine Howard; 6. Catherine Parr.

The reign of Henry VIII. is one of so much interest, that we shall here give some account of it, for the purpose, too, of introducing a sketch of the "Reformation."

Henry succeeded his father at the age of 18, and the first few years of his reign were very popular. He celebrated a marriage with the Infanta Catherine of Arragon; but a great disparity of years and dispositions rendered it an ill-sorted union. The Emperor Maximilian and Pope Julius II. having leagued against France, persuaded Henry to join them, and he accordingly invaded that kingdom; his chief conquest was Tournay, to the see of which he inducted Wolsey, now become his prime-minister. His arms at home were attended with greater success; James IV. of Scotland had invaded England, and was completely defeated at Flodden-Field, where he and his principal nobility perished. Henry made peace with France, on condition of his retaining Tournay, and receiving a large payment of money, part of which was returned as a portion with the Princess Mary, Henry's sister, whom Louis espoused. Henry set no bounds to the confidence reposed in Wolsey, and heaped upon him all sorts of dignities and honours, productive also of immense revenues. Ambitious of glory of every kind, Henry wrote a book against the reformers, which he presented to Pope Leo X., and was in return honoured with the title of "Defender of the Faith." Luther published a reply, in which he treated his antagonist with very little ceremony. Henry's attachment to the see of Rome was not of long duration; for, having conceived an affection for Anne Boleyn, he determined to divorce Catherine, to whom he had been married 18 years. The pope refused to grant his wishes; and Henry, stung with the refusal, married privately, and assumed the title of Supreme Head of the English Church, put down all monasteries, and alienated their possessions to particular purposes. Thus was effected the great revolution which has distinguished this reign in the annals of ecclesiastical history. Though Henry had given so great a blow to the Romish church, it was not his intention to discard its theological system; and he displayed a rooted aversion to the principles of the reformers, by favouring a persecution, which brought several of them to the stake. Fisher and More, both wise, learned, and pious characters, were also the victims of his malignant cruelty, for adhering too firmly to the Church of Rome. From this period, the reign of Henry VIII. was that of a stern tyrant, who sacrificed, without scruple, every obstacle to his capricious will. The new queen, who was attached to the opinions of the reformers, fell under a suspicion of infidelity, was sent to the Tower, tried, and convicted. All attempts to save her life were vain; and her fate was hastened by the king's passion for Jane Seymour, whom he married the day after Anne Boleyn was executed. In 1537, Henry was delighted with the birth of a male heir; but his joy was allayed by the immediate death of the queen.

It was not till the year 1538 that the suppression of religious houses was completed. The king next married Anne of Cleves; but as she did not prove agreeable to his expectations, he put her away, and caused Cromwell, Earl of Essex, the projector of the match, to be beheaded. He then married Catherine Howard, niece to the Duke of Norfolk, who proved unfaithful to him, and was beheaded. In 1543, he took his sixth wife, Catherine Parr, widow of Lord Latimer, a lady of much merit, and inclined to the reformation; and in the year following he regulated the succession of the crown by a bill in parliament, declaring his son Edward, and any future male issue, his immediate heirs, and after them the Princesses Mary and Elizabeth, who were thus legitimated.

He expired on the 28th of January, 1547, in the 38th year of his reign, and the 56th of his age.

After Henry's breach with the Roman pontiff, several slight alterations were made in the liturgy, yet still the service was in Latin.

The king's primer, in English, was published in 1535.

In 1536, Tindal's translation of the whole Bible was not only printed, but ordered to be received into all churches.

In 1539, a book of ceremonies was published, in which is the following passage, favourable to choral music: "The sober, discreet, and devout singing, music, and " playing with organs, used in the church, in the service " of God, are ordained to move and stir the people to " the sweetness of God's word, the which is there sung: " and by that sweet harmony, both to excite them to " prayer and devotion, and also to put them in remem-" brance of the heavenly triumphant church, where is " everlasting joy, continual laud, and praise to God."

VI CURIOUS INVENTIONS for measuring TIME.

1. The SUN-DIAL, for measuring time by the shadow of the sun. This instrument is too well known and understood to require any description of its principles and formation.

Learned men have generally ascribed the invention of the sun-dial to the Babylonians, from whom the Jews derived it, before the time of Ahaz, who began to reign 741 years before the birth of Christ. The dial of Ahaz is mentioned by Isaiah. The ancient Brahmins seem to have been acquainted with this instrument, and to have applied it to astronomical purposes. The Egyptians and Chinese were also acquainted with it at a very early period: with the Greeks, too, it was known in the time of Thales. Vitruvius mentions one, made by the ancient Chaldee historian Berosus, on a reclining plane

Aristarchus Samius invented the hemispherical dial. It was late before the Romans became acquainted with dials: the first set up at Rome was by Papirius Cursor, a Roman general, 293 years before Christ: before that period, there is no mention of any account of time, but by the sun's rising and setting. In about thirty years, they became common at Rome. Scipio Nasica, finding they did not serve in cloudy weather, remedied this defect by introducing a method of dividing the night as well as the day into hours, by means of a water-machine, or clepsydra, brought from Egypt, called by Pliny an *horologium*.

2. The CLEPSYDRA was an invention of the Egyptians, but the name of the inventor is not known. The construction has varied in different countries and ages, according to the variation of the different modes of reckoning time; but one principle is the basis of all the forms it has undergone; namely, the constant dropping or running of water, through a small aperture, out of one vessel into another. At first, the indication of time was effected by marks, corresponding to either the diminution of the fluid in the containing vessel during the time of emptying, or to the increase of the fluid in the receiving vessel during its time of filling; but it was soon found, that the escape of the water was much more rapid out of the containing vessel when it was full than when it was nearly empty, owing to the difference of pressures at different heights of the surface: this irregularity in the dropping presented an obstacle which required much ingenuity to correct. According to M. Vitruvius Pollio, the first improver of the ancient clepsydra was Ctesibius of Alexandria, the son of a barber, who, about 245 years before Christ, spent much time in devising mechanical contrivances, not only for removing the obstacles before mentioned, but a much more formidable one, which arose from the daily inequality of the Egyptian hours. As one twelfth part of the time elapsed from sun-rise to sun-setting on any day was called an hour of that day, and as one twelfth part of the time that passed from sun-setting to sunrise was called an hour of the night, not only did the hours of the day differ from the hours of the night, but from one another, at all times except at the vernal and autumnal equinoxes; hence it became necessary either to make the

water fall irregularly into a receiving vessel, with equidistant hour-marks, or to have varying hour marks for a regular efflux: the first of these methods was effected; and the clepsydra, or water-clock, was thus brought to a certain degree of perfection.

3. The HOUR-GLASS; an instrument for measuring the flux of time, by the descent or running of sand out of one glass vessel into another.

4. The CLOCK. When the first horological machine with a suspended gravitating body as a maintaining power, and a regulator of some determined shape and dimensions to check its velocity, at small equi-distant intervals, was constructed, is not known; and the difficulty in ascertaining it arises from every machine for the division of time having been indiscriminately called, by ancient writers, an horologium. The invention has been attributed to many distinguished men, from Archimedes, before the Christian era, to Wallingford, about the beginning of the fourteenth century; which is the first period that affords certain evidence of a clock, or regulated horological machine.

It is said that the first clock was fixed at Bologna, in the year 1356. About the year 1364, Henry de Wyck, a German artist, placed a clock in the tower of Charles the Vth's palace. In Rymer's Fœdera is mentioned the protection of Edward III. to three Dutchmen, orlogiers, who were invited from Delf into England, in the year 1368; from which time we may date the introduction of clocks into England.

The oldest English clock extant is in a turret at Hampton-court palace, made in the year 1540, for Henry VIII., by a man whose initials are N. O. This clock contains mechanism for representing the motions of the heavenly bodies. The celebrated Copernicus was living at that time, but had not published his book "On the Revolution of the Celestial Orbs;" nor was the pendulum applied as a regulator of clocks for more than a century afterwards; which renders this clock, particularly the wheel-work which constitutes the celestial mechanism, exceedingly interesting, and deserving of minute examination.

5. The WATCH. It is supposed that the reduction of the spring-clock into the portable size of a watch was first effected in Germany, at what period is not precisely

known; but watches had become common in France before the year 1544, in which the corporation of clockmakers in Paris had a statute enacted, securing to themselves the exclusive privilege of making clocks, watches, and alarums in that city.

6. The CHRONOMETER differs from an ordinary watch principally in the escapement and balance, and deserves our more particular notice, inasmuch as the art of navigating vessels over the extensive oceans of the universe is greatly indebted to their accurate measurement of time, in all the variations of heat and cold, from the highest navigable latitudes to the equinoctial line. In steering a vessel over the trackless deep, the great desideratum is, to know, at any given instant, the relative longitude, or distance from the first meridian; and the latitude, or distance from the equinoctial line. A knowledge of these two guides will always suffice to direct on what point of the compass, where the variation is known, a vessel is to be steered, if no current interfere, in order to gain a given harbour.

The first person who proposed to ascertain the relative longitude of any place, or ship at sea, by means of an horological machine for indicating the time of the first meridian, was Gamma Frisius, about the year 1530. The discovery of the isochronism of the pendulum turned the minds of ingenious men to the improvement of clocks; and we find that Lord Kincardine tried a marine pendulum clock, by Dr. Hooke, in the year 1662; and that Christian Huygens, the celebrated Dutch mathematician and mechanician, contrived a timekeeper, actuated by a spring, and regulated by a pendulum, which was tried at sea by Major Holmes, in the year 1664, and spoken of by him in favourable terms.

Many useful discoveries and inventions were made and applied to horological machines between this period and the commencement of the eighteenth century, when another essential improvement in time-pieces, that of jewelling, was introduced by Fabio, a native of Geneva, who, not meeting with encouragement in France, came over to England, and brought his invention into notice.

The British parliament, in the reign of Queen Anne, offered a reward of 10,000*l*. for any method of determining the longitude, within the accuracy of one degree of a great circle; of 15,000*l*. within the limit of forty geographical miles; and of 20,000*l*. within the limit of thirty such miles, or half a degree, provided such method should extend more than eighty miles from the coast.

Mr. Harrison, in 1767, stimulated by the parliamentary reward, directed his attention to the construction of an instrument to answer the purposes which were the object of the highest premium; in which he was eminently successful, and produced his chronometer, thereby gaining the extraordinary but well-earned sum of 20,000*l*.

VI MECHANICAL POWERS. The principal machines by which power is gained are six in number; viz. the LEVER, the WHEEL AND AXLE, the PULLEY (or rather a system of pulleys), the INCLINED PLANE, the WEDGE, and the SCREW. Of these all sorts of mechanical engines consist.

The *lever* is an inflexible bar, turning upon a supporting prop as its centre of motion, which must be firm enough to bear the lever and the weight with which it is charged. There are three kinds of levers, and in each of them the velocity of each point is directly as its distance from the prop.

A lever is said to be of the first kind when the prop is between the weight and the power. Here the power and weight balance each other, when the power is in proportion to the weight, as the distance of the weight from the prop is to the distance of the power from it; so that, if a weight be twenty pounds, and at one foot from the prop, a power of one pound at twenty feet from the prop will balance the weight, supposing the lever itself to have no weight. To this sort of lever may be reduced all iron crows, scissars, pincers, candle-snuffers, and the like.

A lever is said to be of the second kind when the weight is between the prop and the power. Here the lever and weight balance each other, when the power is in proportion to the weight, as the distance of the weight from the prop is to the distance of the power from it. Of this sort are doors turning on hinges, oars, and such knives as are fixed at the point.

A lever is said to be of the third kind when the power is between the weight and the prop. In this the power and weight balance each other, when the power is in proportion to the weight, as the distance of the weight from the prop is to the distance of the power from it; but this lever is never used where power is wanted to be gained; for in it the intensity of the power applied must always exceed the intensity of the weight to be raised, or resistance to be overcome. Of this sort are the bones of our legs and arms, and the wheels of clocks and watches.

In the *wheel and axle*, where the power is applied to the wheel, and the weight drawn up by a rope winding round the axle, the velocity of the power is to the velocity of the weight as the circumference of the wheel is to the circumference of the axle, and the advantage gained by the machine is in the same proportion; for the power and weight balance each other, when the power is in proportion to the weight, as the circumference of the axle is to the circumference of the wheel. This machine is the principal part of the common crane.

A *pulley*, that only turns on its axis, and does not rise with the weight, serves only to change the direction of the power, for it gives no mechanical advantage thereto. But when, besides the upper pulleys which turn round in a fixed frame or block, there is a block of pulleys moving equally fast with the weight, the velocity of the weight is to the velocity of the power as one is to twice the number of pulleys in the moveable block; and the power and weight balance each other when the power is in proportion to the weight, as one is to twice the number of pulleys in the moveable block.

An *inclined plane* is like one-half of a wedge, which has been cut in two equal parts lengthwise. A weight raised, or a resistance moved by an inclined plane, moves only through a space equal to the height of that machine, in the time that a power drives it through a space equal to its whole length. Therefore, the velocity of the power is in proportion to the velocity of the weight, as the length of the machine is to its thickness or height at the back; and the power and weight balance each other when the power is in proportion to the weight, as the thickness of the plane is to its length. All edged-tools which are chamfered (or ground down only on one side to the edge) are inclined planes as far as the chamfer goes from the edge.

A *wedge*, in the common form, is like two inclined planes joined together at their bases; and the thickness of these planes (opposite their sharp edges) makes the back of the wedge, to which the power of the sledge or hammer is applied in cleaving of wood.

When two equal resistances act perpendicularly against opposite sides of the wedge, and a power acts perpendicularly against the back of the wedge, the velocity of the power is in proportion to the velocity of the resistance on either side, as the length of the side is to half the thickness of the back; and the power balances the resistance of the wood, when the power is in proportion to the resistance, as half the thickness of the back of the wedge is to the length of either of its sides, if the sharp edge goes to the bottom of the cleft in the wood. But when the wood splits before the wedge, as it generally does, the power balances the resistance, when the former is to the latter as half the thickness of the wedge (when it is driven quite into the wood) is to the whole length of the cleft below the back of the wedge.

The *screw* may be considered as if it were an inclined plane wrapped round a cylinder. In this machine, the power must turn the cylinder quite round in the time that the weight or resistance (as in a common press) moves through a space equal to the distance between the threads or spirals of the screw. Therefore, the velocity of the power is in proportion to the velocity of the weight or resistance, as the circumference of a circle described by the power is to the distance between the spirals of the screw; and the power and resistance balance each other when the former is to the latter as the distance between the spirals is to the circumference of the circle described by the power. This machine, besides the advantage peculiar to itself, has generally the benefit of the wheel and axle, on account of the winch or lever by which it is turned.

Of these six simple machines all the most compound engines in the world are made. As the screw includes the inclined plane, and two equally inclined planes make the wedge, we have all the mechanical powers combined together in a common jack, if it be turned by the fly; for then we have also the lever, the wheel and axle, and the pulleys.

VI REMARKABLE ECHOES. 1. At Roseneath, near Glasgow, which repeats a tune played on a trumpet three times distinctly. 2. At the sepulchre of Metella, wife of Crassus, there was one which repeated a sentence five times. 3. Is one mentioned by Barthius, too extraordinary to be entirely believed: however, he assures his readers, that this echo not only repeated words seventeen times, but, different from common echoes, where the repetition is not heard till some time after hearing the word spoken, in this, the person who speaks, or sings, is scarcely heard; but the repetition is heard very clearly, and always in surprising varieties; the echo seems sometimes to approach nearer, and sometimes to be farther off. One person hears only one voice, another several; one hears the echo on the right, and the other on the left, &c. 4. A tower is said to have existed at Cyzicus, where an echo repeated seven times. 5. Addison and other travellers in Italy mention an extraordinary echo in that country, at Simonetta palace, near Milan: it will return the sound of a pistol fifty-six times, even though the air be very foggy. 6. And at Brussels there is an echo which repeats fifteen times.

The ancient philosophers, who were entirely unacquainted with the nature of the echo, ascribed it to several causes which are too absurd to deserve notice. The modern state of philosophical knowledge, established upon experience, and upon unerring calculation, shows that sound, or that vibratory motion of the air which constitutes sound, is reflected by hard solids, and in certain cases even by fluids. Thus the sides of a hill, houses, rocks, banks of earth, the bottom of a well, and sometimes even the clouds, have been found capable of reflecting sounds. The configuration of these bodies is much more concerned in the production of the echo than their substances. A smooth surface reflects sounds much better than a rough one. A convex surface is a very bad reflector of sound; a flat one reflects very well; but a small degree of concavity, and especially when the sounding body is in the centre or focus of the concavity renders that surface a much better reflector, and the echo is heard considerably louder.

Without attempting to explain the manner in which the vibrating air impinges upon, and is sent back by the reflecting body, which has not yet been thoroughly investigated, the facts which have been ascertained are as follow: If a person, standing before a high wall, a bank, a rock, &c. at a certain distance, and uttering a word with a pretty strong voice, or, in short, producing a sound with a hammer, or stone, &c., hears a repetition of that word or sound, he will find that the time elapsed between his uttering the word and hearing the echo is equal to that time which a sound is known to employ in going through an extension equal to twice the distance between him and the reflecting wall or rock, &c.; for the vibratory motion of the air must proceed from the sounding person to the wall or rock, and back again from the latter to the former. Now sound is known to travel equally at the rate of 1142 feet per second; therefore, if the person that expresses the word, or any sound whatever, stands at the distance of 1142 feet from the echoing wall, then two seconds of time must elapse between his uttering the sound and his hearing the echo of it. According to the various distances from the speaker, a reflecting object will return the echo of several or of a few syllables; for all the syllables must be uttered before the echo of the first syllable reaches the ear, otherwise it will make a confusion. In a moderate way of speaking, about three syllables and a half are pronounced in one second, or seven syllables in two seconds. From the computations of short-hand writers, it appears, that a ready and rapid orator, in the English language, pronounces from 7000 to 7500 words in an hour; viz. about 120 words in a minute, or two words in each second. Therefore, when an echo repeats seven syllables, the reflecting object is 1142 feet distant, for since sound travels at the rate of 1142 feet per second, the distance from the speaker to the reflecting object, and again from the latter to the former, is twice 1142 feet. When an echo returns 14 syllables, the reflecting object must be 2284 feet distant, and so on.

Therefore, the farther the reflecting object is, the greater number of syllables the echo will repeat; but the sound will be enfeebled nearly in the same proportion, and at last the syllables cannot be heard distinctly. When the reflecting object is too near, the repetition of the sound arrives at the ear whilst the perception of the original sound still continues, in which case, an indistinct resounding noise is heard. This effect may be frequently observed in empty rooms, passages, &c. especially, because in such places several reflections from the walls to the hearer, as also from one wall to the other, and then to the hearer, clash with each other, and increase the indistinctness.

A famous echo is in Woodstock Park, Oxfordshire. It repeats 17 syllables in the day-time, and 20 at night, when, the air being somewhat denser, the sound does not travel quite so fast. Another remarkable echo is said to be on the north side of Shipley church, in Sussex. In favourable circumstances, it repeats twenty-one syllables.

LES SEPTS.

VII LIBERAL ARTS or BELLES-LETTRES. Grammar, Logic, Rhetoric, Poetry, Music, Mathematics, and the Learned Languages.

VII CHURCHES, [illegible] in Asia Minor, mentioned in the Book of Revelation, are Pergamos, Laodicea, Philadelphia, Thyatyra, Sardis, Ephesus, and Smyrna.

VII SAGES of GREECE. First, THALES the Milesian, is allowed by Cicero to have been the most illustrious of the Seven Wise Men. He laid the foundation of philosophy in Greece, and founded the Ionic sect: he was the first of the Greeks who studied astronomy. He was born the first year of the 35th, and died the first year of the 53d Olympiad.

Second, SOLON, one of the wisest and most virtuous men of his age, whose singular qualities, and especially his great meekness, acquired him the affection and veneration of Greece. He was a famous legislator of Athens. Born 639, and died 559 B. C.

Third, CHILO, a Lacedemonian, and one of the ephori of Sparta: very little is related of him. He flourished about 556 B. C.

Fourth, PITTACUS. He was of Mitylene, a city of Lesbos. He delivered his country from the yoke of the Athenians, by defeating their army, and killing Phyrnon, their general, in order to save the lives of the citizens. The Mitylenians, out of gratitude, elected him their sovereign: he behaved with great moderation, and was well beloved by his subjects. After drawing up a code of laws, he resigned the government, and shortly after died, 579 years B. C.

Fifth, Bias. We know very little of him. One of his maxims was, to do all possible good, and ascribe all the glory to the gods. He flourished about 608 years B. C.

Sixth, Cleobulus. We know as little of this wise man as of the former. He was born at Lindos, a town in the Isle of Rhodes, or, as some will have it, Caria. He flourished 588 years B. C.

Seventh, Periandor. He was numbered among the wise men, though he was a tyrant of Corinth. He was extolled by some Greek historians as a great politician and warrior. He died 585 years B. C.

Other names have been substituted for some of the foregoing; as Anacharsis, Epimenides, P[illegible]NEYDES. The first of these is best known in history.

VII HILLS of ROME. Rome was built on seven hills, and is seated on the river Tiber. It was founded 750 years B. C.

VII KINGS of ROME. Romulus, Numa Pompilius, Tullus Hostilius, Ancus Martius, Tarquin the Elder, Servius Tullius, and Tarquin the Proud. It is singular that seven kings who were all elected, of whom four were assassinated, and one dethroned, should have reigned above 240 years; of which hereditary monarchs furnish us no example.

VII KINGDOMS in Britain established by the Saxons, usually called the Saxon Heptarchy. First, Kent, founded by Hengist, about the year 448, and comprehending the county of that name, Middlesex, Essex, and part of Surrey.

Second, Sussex, or South Saxony, by Ælla, a Saxon chief, who extended his dominion over Sussex and part of Surrey.

Third, Wessex, or West Saxony, by Cerdic and his son Kenric. They landed in 495, and, after many battles, contested by the Britons with great bravery, they established the kingdom over the counties of Hants, Dorset, Wilts, Berks, and the Isle of Wight. Cerdic died in 534, and Kenric in 560.

In the year 527, a great tribe of adventurers, under several leaders, landed on the east coast of Britain; and after fighting many battles, of which history has preserved no particular account, they established three new kingdoms in this island. Uffa assumed the title of king of the EAST ANGLES, in 575; Crida that of MERCIA, in 585; and Erkenwin that of EAST SAXONY, or Essex, nearly about the same time. The latter kingdom was dismembered from that of Kent, and comprehended Essex, Middlesex, and part of Herts. That of the East Angles, the counties of Cambridge, Suffolk, and Norfolk. Mercia was extended over all the middle counties, from the banks of the Severn to the frontiers of these two kingdoms.

Seventh, NORTHUMBERLAND. In 547, Ida, a Saxon prince, entirely subdued the county of that name, and the bishopric of Durham, and assumed the crown, under the title of king of Bernicia. Nearly about the same time Ella, another Saxon prince, having conquered Lancashire and the greater part of Yorkshire, received the appellation of the king of Deïri. These two kingdoms were united in the person of Ethelfrid, or Adelfrid, grandson of Ida, who married Acca, the daughter of Ælla, and established one of the most powerful of the Saxon kingdoms, by the title of Northumberland.

VII. WONDERS of the WORLD. First, the temple of Ephesus, founded by Ctesiphon, a Greek architect, consecrated to Diana. This temple falling into decay, was, by command of Alexander the Great, rebuilt by Dinocrates, his own engineer, and the best architect then living.

Second, the Walls of Babylon were built by order of the cruel though ingenious queen Semiramis of Assyria.

Third, the Tomb of Pharos, or the Egyptian Labyrinth. Though designed for the dead, it had sixteen magnificent apartments in it, corresponding to the sixteen provinces of Egypt.

Fourth, the Pyramids of Egypt. These buildings remain almost as strong and as beautiful as ever. There are three; the largest was built by Cheops, one of the kings of Egypt, for his sepulchre; but he was not interred there, being barbarously torn to pieces by his people in a mutiny. Cephus, his brother, erected another, and king Micernius the third.

Fifth, the Tomb of Mausolus. This noble edifice was constructed by the following artists, viz. Scopas, Bryaxis, Timotheus, and Leochares, by order of Artemisia, queen of Caria, as a monument of conjugal love, in honour of her husband Mausolus, whom she loved so tenderly, that, after he was dead, she ordered his body to be burned, and drank his ashes in a cup of wine. Although the queen died before it was finished, the artists who had undertaken it persevered in their labour till they accomplished it. Ever since, magnificent funeral monuments are called Mausoleums.

Sixth, the Colossus of Rhodes, a brazen statue of Apollo, so high, that ships passed with full sails betwixt its legs. It was the workmanship of Chares, a disciple of Lysippus, who spent twelve years in making it. It was overthrown by an earthquake, B. C. 224, after having stood about sixty-six years. Its height was 105 feet. There were few people who could encompass its thumb, which is said to have been a fathom in circumference; and its fingers were larger than most statues. It was hollow, and in its cavities were large stones employed by the artificer to counterbalance its weight, and render it steady on its pedestal.

On occasion of the damage which the city of Rhodes sustained by the above-mentioned earthquake, the inhabitants sent ambassadors to all the princes and states of Greek origin, in order to solicit assistance for repairing it; and they obtained large sums, particularly from the kings of Babylon, Syria, Macedon, Pontus, and Bithynia, which amounted to a sum five times exceeding the damages which they had suffered. But, instead of setting up the Colossus again, for which purpose the greatest part of it was given, they pretended that the oracle of Delphos had forbidden it, and converted the money to other uses. Accordingly, the Colossus lay neglected on the ground for the space of 894 years, at the expiration of which period, or about the year of our Lord 653 or 672, Moawyas, the sixth caliph or emperor of the Saracens, made himself master of Rhodes, and afterwards sold their statue, reduced to fragments, to a Jewish merchant, who loaded 900 camels with metal: so that, allowing 800 pounds weight for each load, the brass of the Colossus, after the diminution it had sustained by rust, and probably by theft, amounted to 720 thousand pounds weight.

Seventh, the image of Jupiter Olympus, erected by the Elians, a people of Greece. This statue was made by the celebrated Phidias, 150 cubits high: the body was of brass, and the head of pure gold. Caligula endeavoured to get it conveyed to Rome; but the people he employed were frightened from their purpose by some unlucky accident.

VII SEAS which encompass EUROPE, The, are the Mediterranean, the Atlantic, the eastern extremity of which is called the German Ocean, the North, or Icy Sea, the Baltic, the White Sea, the Black Sea, and the Grecian, or Archipelago. Archipelago in geography is a general term for a sea intersected with islands, but more especially that between Greece and Asia.

VII ORDERS of INSECTS, called Entomology. First, *Coleoptera*, which have four wings. The upper ones are called elytra, or wing-cases. They are of a hard, horny substance, and meet on the upper part of the body in a direct line. Beetles, &c. thirty Genera.

Second, *Hemiptera*, which have four wings. The upper ones (elytra) resemble strong vellum or parchment: they cover the body horizontally; the inner margins extend the one over the other, not meeting in a direct line, like the Coleoptera. Cricket, &c. twelve Genera.

Third, *Lepidoptera*, which have four wings, all membranaceous and imbricated, or covered with scales, fixed upon them like tiles upon the roof of a house. These, when magnified, appear like feathers. Butterfly, Moth, &c. three Genera.

Fourth, *Neuroptera*. Four wings, membranaceous, but naked; they are like net-work—no sting. Dragon-fly, &c. seven Genera.

Fifth, *Hymenoptera*. Four membranaceous wings,

Fourth, the Pyramids of Egypt.
remain almost as strong and as beautif
are three; the largest was built by Ch
kings of Egypt, for his sepulchre; but h
there, being barbarously torn to pieces
mutiny. Cephus, his brother, erected
Micernius the third.

Fifth, the Tomb of Mausolus. Th
constructed by the following artists, vi
Timotheus, and Leochares, by order o
of Caria, as a monument of conjugal
her husband Mausolus, whom she lo
after he was dead, she ordered his bo
drank his ashes in a cup of wine.
died before it was finished, the ar
taken it persevered in their labour
it. Ever since, magnificent funeral
Mausoleums.

Sixth, the Colossus of Rhodes
Apollo, so high, that ships passed
its legs. It was the workmanship o
Lysippus, who spent twelve years in
overthrown by an earthquake, B. C
stood about sixty-six years. Its
feet. [illegible] people who c
thumb, which is said to have been a
ference; and its fingers were larger th
It was hollow, and in its cavities were h
ployed by the artificer to counterbalance
render it steady on its pedestal.

On occasion of the damage which the
sustained by the above-mentioned earthqu.
bitants sent ambassadors to all the princes
Greek origin, in order to solicit assistance f
it; and they obtained large sums, particularl
kings of Babylon, Syria, Macedon, Pontus, an
which amounted to a sum five times exc
damages which they had suffered. But, instea
up the Colossus again, for which purpose
part of it was given, they pretended that tl
Delphos had forbidden it, and converted tl
other uses. Accordingly, the Colossus lay

or COLOURS in HERALDRY.

Metals.	Precious Stones.
Gold.	Topaz.
Silver.	Pearl.
Red.	Ruby.
Blue.	Sapphire.
Black.	Diamond.
Green.	Emerald.
Purple.	Amethyst.

The, are seven celebrated paintings,
aphael. It has been a generally-
these works were purchased by
ommendation of Rubens; but there
that they were brought to England
her. The subjects are:
anias, as related in the fifth chapter
postles.
orcerer stricken with blindness.

aled by Peter and John. Acts iii.
raught of fishes. Luke v.
at Lystra, where the priests of
fice to them. Acts xiv.
hens.
Peter, from the Evangelists

The, whi

Th

which are naked: the tails of the females are armed with a sting. Bee, &c. ten Genera.

Sixth, *Diptera*, which have only two wings; being furnished with poisers or balancers (called halteris) instead of under-wings. Fly, &c. ten Genera.

Seventh, *Aptera*. This order of insects never have wings in either sex, or at any period. Spiders, &c. fourteen Genera.

VII PARTS of a FLOWER. The constituent parts of a perfect flower are SEVEN in number. The first is called *calyx*, empalement, or cup: it is the termination of the outer bark of the plant; which, after accompanying the trunk, or stem, through all its branches, breaks out with the flower.

The second object is the *corolla*, or foliation, which is the termination of the inner bark continued to and accompanying the fructification in this new form of painted leaves. The leaves of which the corolla consists are called petals, to distinguish them from the green leaves of the plant.

The *stamina* form the third constituent part in flowers: each single stamen consists of two parts; first, the filament or thread, vulgarly called the chive, which serves to elevate the anthera, apex, or summit, and at the same time connects it with the flower; secondly, the anthera itself, which contains within it the fertilising dust, and, when come to maturity, discharges it. The pollen is a fine dust, secreted within the anthera, and destined for the impregnation of the germen or bud.

The fourth part of a flower is the *pistil*, and is a very essential one. It consists of three parts; first, the germen or bud, which is the rudiment of the fruit, accompanying the flower, but not yet arrived at maturity; second, the style, which serves to elevate the stigma from the germen; and, third, the stigma, which is the summit of the pistil.

The fifth part of a flower is the *pericarpium*, or seed-vessel, which is the germen grown to maturity.

The *seed*, which is the sixth part of a flower, is the natural offspring of the flower. When this is once formed, the several parts of the flower dwindle and disappear.

The seventh is the *receptacle*, which is the base that connects the other six parts of fructification.

VII TINCTURES or COLOURS in HERALDRY.

	Metals.	Precious Stones.
Or,	Gold.	Topaz.
Argent,	Silver.	Pearl.
Gules,	Red.	Ruby.
Azure,	Blue.	Sapphire.
Sable,	Black.	Diamond.
Vert,	Green.	Emerald.
Purpure,	Purple.	Amethyst.

VII CARTOONS, The, are seven celebrated paintings, in water-colours, by Raphael. It has been a generally-received opinion, that these works were purchased by Charles I., at the recommendation of Rubens; but there is reason for believing that they were brought to England in the reign of his father. The subjects are:

1. The death of Ananias, as related in the fifth chapter of the Acts of the Apostles.
2. Elymas the sorcerer stricken with blindness. Acts xiii.
3. The lame man healed by Peter and John. Acts iii.
4. The miraculous draught of fishes. Luke v.
5. Paul and Barnabas at Lystra, where the priest of Jupiter is going to sacrifice to them. Acts xiv.
6. Paul preaching at Athens.
7. Christ's charge to St. Peter, from the Evangelist St. John xxi.

VII ILLUSTRIOUS CITIES, The, which disputed the right of having given birth to the greatest of poets, are the following: Smyrna, Chios, Colophon, Salamis, Rhodes, Argos, and Athens.

> Seven mighty towns contend for Homer dead,
> Through which the living Homer begg'd his bread.

VII NUMERICAL LETTERS, The, are, I. V. X. L. C. D. M. 1.5.10.50. 100.500.1000.

VII YEARS' FAMINE, The, in Egypt, began 1708 B. C.

VII STARS, called the Pleiades; a northern constellation.

VII AGES of MAN.

——————— At first the infant,
Mewling and puking in the nurse's arms.
And then the whining school-boy, with his satchel,
And shining morning face, creeping like snail
Unwillingly to school. And then the lover,
Sighing like furnace, with a woeful ballad
Made to his mistress' eye-brow. Then a soldier,
Full of strange oaths, and bearded like the pard,
Jealous in honour, sudden and quick in quarrel;
Seeking the bubble reputation
Even in the cannon's mouth. And then the justice,
In fair round belly, with good capon lined,
With eyes severe, and beard of formal cut,
Full of wise saws and modern instances,—
And so he plays his part. The sixth age shifts
Into the lean and slipper'd pantaloon,
With spectacles on nose, and pouch on side;
His youthful hose, well saved, a world too wide
For his shrunk shanks; and his big manly voice
Turning again toward childish treble, pipes
And whistles in his sound. Last scene of all,
That ends this strange, eventful history,
Is second childishness, and mere oblivion,
Sans teeth, sans eyes, sans taste, sans every thing.

SHAKSPEARE.

VII SONS of SAUL put to death to avenge the blood of the Gibeonites.

The Gibeonites were descended from the Hivites; they submitted to the burthens imposed on them by Joshua, and continued faithful to the Israelites. Nevertheless, Saul destroyed a great number of them (2 Sam. xxi. 1, 2, 3, &c.); but God, as a punishment of this cruelty, in the reign of David, caused a famine which lasted three years (B. C. 1017); and David was informed by the prophets, that this calamity would continueas long as that cruelty which Saul had exercised against the Gibeonites remained unretaliated. The Gibeonites being asked what satisfaction they required, answered, "seven of

Saul's sons will be put to death to avenge the blood of our brethren." Accordingly, the Gibeonites crucified them in the beginning of the spring, when in Palestine the barley-harvest commenced.

VII EDITIONS of the KORAN or ALCORAN. There are seven principal editions of the KORAN, vulgarly called the Alcoran (or Mahometan Bible, containing the revelations, doctrines, and prophecies of the pretended prophet Mahomet); two at Medina, one at Mecca, one at Cufa, one at Bassora, one in Syria, and the common vulgate edition. The first contains 6000 verses; the second and fifth, 6214; the third, 6219; the fourth, 6236; the sixth, 6226; and the last, 6225; but the number of words and letters is the same in all; viz. 77,639 words, and 323,015 letters.

It is the common opinion among us, that Mahomet, assisted by Sergius, a monk, composed this book; but the Mussulmen believe it as an article of their faith, that the prophet, who they say was an illiterate man, had no concern in inditing it, but that it was given him by God, who to that end made use of the ministry of the angel Gabriel; that it was communicated to Mahomet by a verse at a time, and in different places, during the course of 23 years.

The Koran, it is to observed, while Mahomet lived, was only kept in loose sheets: his successor, Abubeker, first collected the contents into a volume, not only from the palm-leaves and skins upon which they had been written, but also from the mouths of those who had committed them to memory; and when the transcript was completed, entrusted the keeping of it to Haphsa, the daughter of Omar, one of the widows of Mahomet, in order to be consulted as an original; and there being a good deal of diversity between the several copies already dispersed throughout the provinces, Ottoman, or Othman, successor of Abubeker, in the thirtieth year of the Hegira, procured a great number of copies to be taken from that of Haphsa, at the same time suppressing all the others not conformable to the original.

The Koran is universally allowed to be written with the utmost elegance and purity of language, in the dialect of the tribe of Koreish, the most noble and polite of all the Arabians, but with some mixture, though very rarely, of other dialects. It is confessedly the standard of the Arabic tongue.

Amongst the Mahometans, this book is in the greatest reverence and esteem. The Mussulmen dare not so much as touch the Koran without being first washed, or legally purified; to prevent which, an inscription is put on the cover or label: "Let none touch it but they who are clean." It is read with care and respect, being never held below the girdle.

VII AUXILIARY VERBS. Do, will, shall, may, can, be, and have.

VII DOMINICAL LETTERS, A, B, C, D, E, F, G, used in almanacs, ephemerides, &c. to denote the Sundays throughout the year.

The dominical letters were introduced into the calendars by the primitive Christians, in lieu of the nundinal letters in the Roman calendar.

VII NOTARIES. Ecclesiastical notaries were officers in the first ages of the church, whose business it was to collect and preserve the acts of martyrs. They are supposed to have been instituted by St. Clement: their number was seven, and they were disposed in the seven regions or divisions of Rome.

Pope Fabian, judging the short-hand of the notaries too obscure for common use, added seven subdeacons to them, to transcribe at length what the notaries drew in short. These officers were afterwards set aside, and two other kinds established, viz. apostolical notaries, and episcopal notaries.

VII REMARKABLE instances of LONGEVITY. The most remarkable instance of post-diluvian longevity is that of a negress in South America, named Louisa Truxo, who lived to the extraordinary age of 175, and was living in October 1780. Next to her, Henry Jenkins of Ellerton in Yorkshire, who lived 160 years; he died in 1690. Thomas Parr, of Shropshire, 152 years, died 1605. James Bowels, of Killingworth, 152 years, died 1656. Francis Consist, of Yorkshire, 150 years, died 1768. Albura Marc, of Ethiopia, 150. Titus Fullonius, of Bononia, 150.

VII PERIODS of the history of the OLD TESTAMENT. In ancient sacred history, otherwise called the history of the Old Testament, there are seven remarkable periods. The first comprehends 1656 years, from the creation of the world to the deluge. The second period includes 857 years, from the deluge to the going forth of the Israelites out of Egypt. The third period begins with the Exodus of the Israelites in 2513, extends to the times of the kings, and includes 396 years. The fourth period begins in the year of the world 2909, or from the beginning of the government by kings, and extends to the end of the Babylonish captivity, or 3468th year of the world, including 559 years. The fifth period amounts to 372 years, from the year of the world 3468 to the year 3840, or to the times of the Maccabees. The sixth period begins with Judas Maccabæus, A. M. 3840, and is continued to the year 3964, or to Herod the Great, comprehending 124 years. The seventh, or last period, reaches from Herod the Great to the destruction of Jerusalem, or the 70th year after the birth of Christ, containing 106 years.

In more modern sacred history, called ecclesiastical history, or the history of the Christian church, there are four remarkable periods. The first comprehends the state and vicissitudes of the Christian church from its commencement to the time of Constantine the Great. The second period, from the reign of Constantine to that of Charlemagne, which produced such a remarkable change in the face of Europe. The third period contains the history of the church from the time of Charlemagne to the memorable period when Luther rose in Germany to oppose the tyranny of Rome, and to deliver divine truth from the darkness that covered it. The fourth period reaches from the time of Luther to the present times.

VII MODIFICATIONS of CLOUDS. By the term modification is meant the structure or manner of aggregation, in which the influence of certain constant laws is sufficiently evident, amidst the lesser diversities resulting from occasional causes. Hence the principal modifications are as distinguishable from each other as a tree from a hill, or a hill from a lake, although clouds, in the same modification, compared with each other, have only the common resemblance which exists among trees, hills, and lakes, taken generally. Of these seven modifications there are three simple and distinct, which are thus named and defined:

1. The CIRRUS. A cloud resembling a lock of hair or a feather: parallel flexuous or diverging fibres, unlimited in the direction of their increase.

2. The CUMULUS. A cloud which increases from above, in dense, convex, or conical heaps.

3. The STRATUS. An extended, continuous, level sheet of cloud, increasing from beneath.

There are two modifications, which appear to be of an intermediate nature: these are,

4. The CIRRO-CUMULUS. A connected system of small roundish clouds, placed in close order or contact.

5. The CIRRO-STRATUS. A horizontal or slightly inclined sheet, attenuated at its circumference, concave downward, or undulated. Groups or patches having these characters.

Lastly; there are two modifications, which exhibit a compound structure, viz.

6. CUMULO-STRATUS. A cloud in which the structure of the cumulus is mixed with that of the cirro-stratus or cirro-cumulus. The cumulus flattened at top, and overhanging its base.

7. The NIMBUS. A dense cloud, spreading out into a crown of cirrus, and passing beneath into a shower.

VII PRISMATIC COLOURS. The ideas entertained by the ancients concerning the nature of colours were mostly wild and absurd; nor has the present theory, imperfect as it is, been formed without an innumerable variety of experiments, observations, and the concurring investigations of a great many ingenious persons. The followers of Pythagoras called colour the superficies of bodies; Plato considered it as a flame issuing from them; Zeno called it the configuration of matter; and Aristotle said it was that which rendered bodies actually transparent. The philosophers of those times paid little or no regard to experiments; hence they made no discoveries or improvements worthy of being recorded. A long and unprofitable period of nearly two hundred years elapsed from the commencement of philosophical studies in Greece, till the time of Des Cartes, when the revival of learning in Europe renewed with additional vigour the inquiries concerning the nature of light and colours. Des Cartes considered colour as a modification of light, and he attributed the difference of colour to the prevalence of the direct or rotatory direction of light. Grimaldi and others supposed that a certain elastic medium of a peculiar kind filled the universe, and that the difference of colour depended upon the quick or slow vibration of that medium. Such were the ideas of philosophers respecting the nature of colours when Sir Isaac Newton began to examine the subject in his cautious and experimental manner, by which means, about the year 1666, he discovered the foundation of a theory of colours, which has been justly adopted and admired by his contemporaries and succeeding generations. Rays of light issuing from a luminous object proceed in straight lines as long as they pass through a uniform medium. If they meet with a transparent medium of different density, they will also proceed through it in straight lines, provided they enter that medium in a direction perpendicular to its surface; otherwise, they are caused to bend their course, so that beyond the above-mentioned surface they proceed in straight lines also; but these straight lines form a certain angle with the line of their direction before they entered the last medium. The bending of the rays is called the *refraction* of light, and the angle that has just been mentioned is called the angle of refraction. Sir Isaac Newton having presented a glass prism, or kind of wedge, to the light of the sun, which entered a dark room through a small hole, found not only that the rays were bent from their course, i. e. refracted, but he likewise observed, that the image of the sun was thereby considerably elongated; and this elongated image, instead of appearing of a uniform bright white light, was revolved into a series of colours, which exactly resembled the colours of the rainbow, viz. *red, orange, yellow,* *green*, *indigo*, and *violet*. This elongation of the solar image, thus formed, is called the *dispersion* of light. These colours pass from one to the other by very small and imperceptible gradations, so that it is impossible to say where one ends and the next begins. Various methods have been tried for the purpose of rendering the colours of this prismatic spectrum more limited and distant; none, however, has yet been attended with success.

VII DAYS of the WEEK. The origin of this division of weeks, or of computing time by sevenths, is very ancient. The Syrians, Egyptians, and most of the oriental nations, appear to have used it from all antiquity, though it did not get footing in the west till Christianity brought it in. The Romans reckoned their days, not by sevenths, but by ninths; and the ancient Greeks by decads or tenths.

Indeed, the Jews divided their time by weeks, but it was upon a different principle from the other eastern nations; God himself having appointed them to work six days, and rest the seventh, in order to keep up the remembrance of the creation, which, being effected in six days, he rested the seventh.

The ancient heathens denominated the days of the week from the seven planets; which names are still generally retained among the Christians of the west.

Our ancestors, the Saxons, before their conversion to the Christian faith, named the seven days of the week from the Sun and Moon and some of their deified heroes, to whom they were peculiarly consecrated, which names we receive and still retain: thus

SUNDAY was devoted to the Sun. [It is now more properly called the *Lord's day*, because kept as a feast in memory of our Lord's resurrection on this day; and *Sabbath-day*, because substituted under the new law in the place of the sabbath of the old law.]

MONDAY to the Moon.

TUESDAY, according to some, to Tuisto or Tuisco, mentioned by Tacitus; but, according to others, to Thysa or Dysa, the wife of Thor, and the goddess of justice; or, according to others, to Tyr.

WEDNESDAY to Woden, the god of war.

THURSDAY to Thor, who presided over the air, and was supposed to govern the winds and clouds: this is the same with Lucan's Taranis, similar to the Welsh word for thunder.

FRIDAY to Friga or Fræa, the wife of Thor, and the goddess of peace and plenty.

SATURDAY to Seater, called also Orodo, to whom they prayed for protection, freedom, and concord, and for all the fruits of the earth.

VII NOTES in MUSIC, designated by the seven first letters of the alphabet, and called the GAMUT.

The first music, as reason points out, must have been vocal; but the use of musical instruments may be traced to the earliest times; for Jubal, the eighth descendant from Adam, was called "the father of all such as handle the harp and organ," Gen. chap. iv. 21. The invention of the lyre has been ascribed by Apollodorus to Mercury, who, in walking along the banks of the Nile, chanced to kick the shell of a tortoise which had been washed ashore, and the flesh dried and wasted by the sun: nothing remained within the shell but nerves and cartilages, which, on being struck, vibrated and produced sound. Mercury was pleased with it, and conceived the idea of the lyre, which instrument he afterwards constructed in the form of a tortoise, and strung it with the dried sinews of animals. Many attribute the invention of music itself to Mercury, as well as the lyre: others suppose the word music comes from *musa*, because it was imagined that the art was invented by the Muses; but Kircher, from Diodorus Siculus, derives the title from an Egyptian word, pretending that it was in Egypt that music began to be cultivated after the deluge, and that the first sound that was heard came from the reeds on the banks of the Nile, when blown into by the wind.

Music was in high estimation among many people of antiquity, but principally the Greeks; and this esteem was proportioned to the power and surprising effects which they ascribed to the art. Plato has the courage to say, that no change can be made in music without affecting the constitution of the state; and pretends, that there are sounds which excite meanness of soul, insolence, and their contrary virtues. Aristotle, who seems to have written his politics only to oppose the sentiments of Plato, agrees with him, however, concerning the power which music has over morals. The judicious Polybius tells us, that music was necessary to soften the manners of the Arcadians, who inhabited a country where the air was cold and impure; that those of Cynethia, who neglected music, surpassed all the Greeks in cruelty, and that there was no city in which so many crimes had been perpetrated. Athenæus assures us, that formerly all laws, divine and human exhortations to virtue, knowledge of what concerned the gods and heroes, the lives and actions of illustrious men, were written in verse, and sung publicly in chorus to the sound of instruments.

So much importance did these people attach to music, so jealous were they of its purity, that it was made the subject of legislation; and on one occasion the following decree of the state, or, as the Romans called it, *senatus-consultum*, was issued: "Whereas Timotheus the Milesian, coming to our city, has dishonoured our ancient music. and, despising the lyre of seven strings, has, by the introduction of a greater variety of notes, corrupted the ears of our youth; and by the number of his strings, and the novelty of his melody, has given to our music an effeminate and artificial dress, instead of the plain and orderly one in which it has hitherto appeared; rendering melody infamous, by composing in the chromatics instead of the enharmonic.——The kings and the ephori have, therefore, resolved to pass censure upon Timotheus for these things; and, farther, to oblige him to cut all the superfluous strings of his *eleven*, leaving only the *seven* tones, and to banish him from our city, that men may be warned for the future not to introduce into Sparta any unbecoming customs."

Music made a part of the study of the Pythagoreans; they used it to inspire the heart with laudable actions, and to inflame it with the love of virtue. According to these philosophers, our soul was in a manner composed of harmony; and they believed that they could establish, by means of the harmony of sense, the intellectual harmony and primitive faculties of the soul; that is to say, that which, according to them, subsisted in its preexistent state before it animated our bodies, and when it inhabited the heavens.

Music is at present fallen from this degree of majesty and power so low as to make us doubt of the truth of those wonders which it operated formerly, though attested by the most judicious historians and most grave philosophers of antiquity. However, we find in modern history some similar facts. If Timotheus excited the fury of Alexander by the Phrygian mode, and calmed it by the Lydian, a music more modern is said to have extended this power still farther, in exciting in Eric, king of Denmark, such a fury as led him to kill his best domestics. Doubtless these unfortunate domestics were less sensible to the charms of music than their prince, otherwise he might have run the risk of sharing half the danger. D'Aubigny relates another story, quite similar to that of Timotheus. He says, that in the reign of Henry III. of France, the musician Claude le Jeune, playing at the nuptials of the duke de Joyeuse in the Phrygian mode, animated, not the king, but a courtier, who forgot himself so far as to put his hand to his sword in the presence of his sovereign; but the musician, hastening to calm him, had recourse to the Hypo-Phrygian mode. This is said with as much confidence as if the musician Claude knew exactly in what the Phrygian mode and the Hypo-Phrygian mode consisted.

If our music has but little power over the affections of the soul, it is at least capable of acting physically upon the body; witness the history of the tarantula spider, too well known to require repetition. Witness, too, the women mentioned by Boyle, who burst into tears when they heard a certain tune, which had no uncommon effect on the rest of the audience. Rousseau says, "I knew at Paris a woman of condition who could not bear any kind of music without being seized with an involuntary and violent fit of laughter." We read in the History of the Academy of Sciences of a musician who was cured of a violent fever by a concert at his bed-side. Sounds act even upon inanimate bodies, as is manifested by the vibrating and resonance of a sonorous body, when another with which it is perfectly in tune is caused to sound. Morhoff mentions a certain Dutchman, of the name of Petter, who broke a glass by the sound of his voice. Kircher speaks of a great stone which vibrated at the sound of a certain organ-pipe. Père Mersenne also speaks of a certain flag-stone, in the pavement of a church, which trembled at the sound of an organ as much as if there had been an earthquake. Boyle adds, that the stalls tremble often at the sound of the organ in a cathedral; that he has felt them tremble under his hand, at the sound of the organ or a voice; and he has been assured, that those which were firmly put together vibrated at some determinate note. Every one has heard of a famous pillar in the church of Rheims which trembles sensibly at the sound of a certain bell, while the other pillars remain motionless; but what bereaves sound of the marvellous in this case is, that this same pillar equally shakes when the clapper is taken from the bell.

All these examples, the chief of which belong more to sound than music, and of which physics can give some explanation, render not the marvellous and almost divine effects, which the ancients attributed to their music, more intelligible or worthy of credence.

VII CATHOLIC EPISTLES, The, so called because they were written to Christians in general, are, the Epistle of St. James, written at Judea; the two Epistles of St. Peter, at Rome; St. John's first, second, and third Epistles, at Ephesus; and the Epistle of St. Jude: it is not known where this was written.

VII ANCIENT and WONDERFUL CITIES. 1. NINEVEH, the capital of Assyria, so called from its founder Ninus, according to profane historians. But the Scripture ascribes its origin to Ashur, son of Shem, or Nimrod, the son of Cush, and grandson of Ham. Whoever was the founder of Nineveh, it appears to have been one of the most ancient and powerful cities of the world, and to have been situated on or near the Tigris. In the time of the prophet Jonah, it was reckoned to contain more than 120,000, "who could not distinguish their right hand from their left," or of young children who had not attained the age of reason; whence it has been inferred, that the number of inhabitants at that time amounted to 600,000. Strabo allows it to have been much larger than Babylon. Diodorus Siculus says, that it was 480 stadia, or 47 miles in circumference, surrounded by lofty walls and towers; the former being 100 feet high, and so broad that three chariots might drive upon them abreast; and the latter, of which there were 1500, were each 200 feet high. Nineveh was taken by Arbaces and Belesis, in the year B. C. 747, under the reign of king Sardanapalus, in the time of Ahaz, king of Judah, or about the time when Rome was founded. It was taken a second time under Astyages and Nabopolassar, from Chinaladan, king of Assyria, B. C. 626, and no more recovered its former splendour.

2. BABYLON, the capital of ancient Babylonia, or Chaldæa, was situated on the Euphrates: it was founded, as some say, by Semiramis, and, according to others, by Belus, who is thought by many to have been Nimrod. This city was surrounded by walls 87 feet thick, and 350 feet high, and in compass sixty miles. The walls formed an exact square, each side of which was fifteen miles long, built of large bricks, cemented together with bitumen, a glutinous slime which issues out of the earth in that country, and in a short time becomes harder than the brick or stone cemented by it. Without the walls, the city was encompassed by a large ditch, filled with water, and lined on both sides with bricks. In the walls there were 100 gates, or twenty-five in each of the four sides, all of which were formed of solid brass, referred to by the prophet Isaiah. Between every two of these gates were three towers, and four more at the four angles of this large square, and three between each angle and the next gate on either side; and each of these towers was ten feet higher than the walls. From the twenty-five gates on each side of this square proceeded twenty-five streets, extending in straight lines to the corresponding gates in the opposite sides; so that the number of streets was fifty, each of which was fifteen miles long, and all crossing one another respectively at right angles. Besides these, there were also four half streets, which were rows of houses facing the four inner sides of the walls. These latter were properly the four sides of the city within the walls; each of them was 200 feet broad, the whole streets being about 150 feet in breadth. By this intersection of the fifty streets, the city was divided into 676 squares, each of which was four furlongs and a half on each side, or two miles and a quarter in compass. On every side of these squares

stood the houses, all of three or four stories in height, and beautified with every kind of ornament: the space within each of the squares was laid out in gardens.

An object particularly worthy of notice in this noble city was the Temple of Belus. In the middle of this temple stood the ancient tower, supposed to have been the famous tower of Babel. This tower was at its base a square of a furlong on each side, or half a mile in compass, and consisted of eight towers, as they appeared to be, built one above the other; the height of each being 75 feet, and that of the whole 600 feet. On the top there was an observatory, by which the Babylonians extended their skill in astronomy beyond other nations; for when Alexander took Babylon, Callisthenes, the philosopher who accompanied him, found they had astronomical observations for 1903 years from that time, which carried up the account as high as the 115th year after the flood, or within fifteen years after the tower of Babel was built. Till the time of Nebuchadnezzar, the temple of Belus contained only this tower, the rooms of which served all the occasions of its idolatrous worship. But he enlarged it by erecting edifices around it in a square of two furlongs on every side, and a mile in circumference, exceeding the square at the temple of Jerusalem by 1800 feet. In this wall were several gates of solid brass, supposed to have been formed out of the brazen sea, brazen pillars, and other vessels and ornaments, which Nebuchadnezzar had brought to Babylon from Jerusalem; for he is said to have dedicated in this temple the spoils of that expedition. In the same place were several images or idols of massy gold; one of them, which was a statue of Belus, in an erect posture, forty feet high, resting on a pedestal 50 feet in height. As this is said to have weighed 1000 Babylonish talents, it is computed to have been worth three millions and a half of our money.

The hanging-gardens of Babylon were also objects of peculiar interest. They were raised on arches by Nebuchadnezzar to gratify his wife Amyctis. They contained a square of four hundred feet on every side, and were carried up into the air in several terraces, laid one above another, and the ascent from one terrace to another was by stairs 10 feet wide. The arches sustaining the whole pile were raised above one another, and it was strengthened by a wall on every side, of twenty-two feet in thickness. In the upper terrace there was an aqueduct, or engine, whereby water was drawn up out of the river for watering the whole of the gardens.

3. **Persepolis**, an ancient city of Persia, formerly called "Elymais." It was situated at the bottom of a mountain, commanding a view of the extensive plain of Merdasht, and encircled by the mountain Rehumut, in the form of an amphitheatre, forming a wonderful natural fortification. The temple or palace at Persepolis, now called "the throne of Jemshid," is supposed to have been erected in the time of Jemshid, and to have been posterior to the reign of the Hindoo monarchs.

4. **Palmyra** was a famous city in the desert of Syria, in the pashalic of Damascus. This city appears to have been originally built by Solomon, and called Tadmor. Josephus assures us that this was the same city which the Greeks and Romans afterwards called Palmyra; and it is still called Tadmor by the Arabs of the country. The site of Palmyra is one of those few cultivated spots which rise in the deserts of Arabia and Egypt, like islands out of the sandy sea. This city is first mentioned by the Roman historians as a place which Marc Antony, after his victory at Philippi, about forty years B.C., attempted to plunder, pretending that it had not observed a just neutrality between the Romans and Parthians. The buildings of Palmyra were of the most magnificent description, and very numerous; but of all, the Temple of the Sun was the most splendid. There was also in this city a piazza 40 feet broad, and more than half a mile in length, enclosed with two rows of marble pillars, twenty-six feet high, and eight or nine feet in compass, the number of which could not have been less than five hundred and sixty. Near this piazza stood a stately building, supposed to have been a banqueting-house, finished with the best sort of marble, having porphyry pillars thirty feet long. Greece and Rome had nothing to compare in magnificence with Palmyra.

5. **Balbec**, another famous city of Syria, in the pashalic of Saide, celebrated by the Greeks and Latins under the name of Heliopolis, or the City of the Sun, described by the Arabians as the wonder of Syria, and

denoting by its present Arabic name Balbec, i. e. the *vale of Baal*, its connexion with the worship of the Sun, of which *Baal*, as the chief idol deity of the country, was an appropriate denomination. Balbec was second to Palmyra only in the magnificence of its buildings.

6. ATHENS, called by way of eminence "*the city*," was the capital of Attica, and the seat of the Grecian empire. It was founded by Cecrops about 1556 years before Christ, and from him called "Cecropia." It afterwards, in the reign of Erectheus, about 1397 years B. C. assumed the name of Athens, from Minerva, the protectress of the city. Cecropia was seated upon a hill or rock in the midst of a spacious fertile plain, partly with a view of securing it against piratical invaders, and partly to prevent its being overwhelmed by inundations, which were then much dreaded. In time, as the number of inhabitants increased, the whole plain was covered with buildings, which were denominated, from their situation, "the lower city," and Cecropia was called "Acropolis," or "the upper city." Its buildings and statues have been mentioned in the articles on Architecture and Sculpture. In Athens literature and the arts were cherished and carried to the highest possible degree of perfection, particularly in the age of Pericles.

7. ROME. Ancient Rome, though in its origin one of the most humble cities, was destined to become the capital of the largest empire in the world. In modern history it has been famous for being the centre of ecclesiastical tyranny, under which, for many centuries, the greater part of the civilised world was held in subjection. This city was, without dispute, founded by Romulus; but we may trace the origin of its inhabitants, that is, of the ancient Romans, to Æneas, the hero celebrated in Trojan story. When the Greeks became masters of Troy, Æneas, with the forces under his command, retired into the fortress, which for some time they defended with great bravery; being at length compelled to yield, he conveyed away his gods, his father, wife, and children, and fled with a numerous crowd of Trojans attached to him to the stony places of Mount Ida. Here his enemies followed, and forced him to quit the Trojan territories altogether; engaging, on their part, not to molest him in his retreat. Æneas accordingly equipped a fleet, in order to seek a

settlement in a foreign land. He crossed the Hellespont, and arriving in the peninsula of Pallene, he built a city, calling it after himself Ænea, and left in it part of his followers. Thence he sailed to Delos, and then to Cythera, leaving every where memorials of himself. Ultimately he arrived in Italy. He gave the name of Palinurus to the cape at which he first landed, from one of his pilots who died there. From this place he sailed to several other parts, till at length the Trojan prince and his faithful attendants finished their long voyages on the coast of Latium, a small territory on the east side of the river Tiber, which now contains part of the present Campagna di Roma. So much has been said of the manners, customs, and wars of the Romans in other parts of this work, that it is unnecessary to say more here than that it became, after Athens, the seat of literature and the arts; and that the refinement, luxury, and vices of the Roman people have never been surpassed.

Nineveh was noted for its towers and walls of vast circumference, height, and breadth; Babylon, for the hanging-gardens, and other objects of human labour; Persepolis, for its natural fortifications; Palmyra and Balbec, for sumptuous buildings; and Athens and Rome, for the civilisation, refinement, and high accomplishment of their inhabitants. But LONDON may be denominated the modern wonder of the world—

> "Opulent, enlarged, and still-increasing London."

VII SONS of JAPHETH. Japheth was the eldest son of Noah, and born in the 500th year of his father. Japheth had seven sons, viz. Gomer, Magog, Madai, Javan, Tubal, Meshech, and Tiras, who peopled the isles of the Gentiles, and settled in different countries, each according to his language, family, and people. By "the isles of the Gentiles," the Hebrews understood the isles of the Mediterranean, and other countries whither they could go only by sea, as Spain, Gaul, Italy, Greece, and Asia Minor. It is supposed that Gomer is the father of the Cimbri or Cimmerians; Magog, of the Scythians; Madai, of the Macedonians or Medes; Javan, of the Ionians or Greeks; Tubal, of the Tiburenians; Meshech, of the Muscovites or Russians; and Tiras, of the Thracians.

LES HUITS.

VIII LANGUAGES derived from the GOTHIC; viz. the German, Saxon, Dutch, English, Danish, Norwegian, Swedish, and Icelandic.

VIII SORTS of feet in POETRY. The Trochee, Iambus, Spondee, Dactyl, Pyrrhic, Amphibrach, Anapæst, and Tribrach.

VIII DAYS the IDES, in the Roman calendar. A denomination given to eight days in each month; commencing, in the months of March, May, July, and October, on the fifteenth day; and in the other months, on the thirteenth day; and reckoning backward, so as in these four months to terminate on the eighth day, and in the rest, on the sixth.

This way of accounting is still in use in the Roman Chancery, and the Calendar of the Breviary. The Ides of March were always esteemed unhappy after Cæsar's murder.

VIII KINGS of ENGLAND who have fallen by the hands of men since the Conquest.

William II., shot in the New Forest by Sir Walter Tyrrel.

Richard I., mortally wounded by a bearded arrow at the siege of the castle of Charluz.

Edward II., barbarously murdered at Berkeley castle, by a red-hot iron, which was thrust into his bowels.

Richard II., basely murdered at Pomfret castle, by Sir Pierce Exton, after having killed, in his defence, four of the assassins.

Henry VI., barbarously murdered in the Tower, by Richard duke of Gloucester.

Edward V. was with his brother smothered in bed, by Forrest and Dighton, in their apartments in the Tower.

Richard III. was killed at Bosworth Field, and buried at Greyfriars in Leicestershire.

Charles I. was beheaded in front of the Banqueting-house, Whitehall, and first buried at Windsor, but was afterwards removed to Henry VII.'s Chapel at Westminster.

VIII PRINCIPAL MOUNTAINS. The highest mountain in Europe is Mont Blanc in Switzerland, 15,680 English feet above the level of the sea; the highest in Asia is Mount Lebanon, 9,520; the highest in Africa is Geesh, 15,050; the highest in America is Chimboraço, which is the highest summit of the Andes, and one of the highest on the face of the earth, 20,909. The highest mountain in Great Britain is Ben-Nevis in Inverness-shire, 4380; the highest of the Alps is Loucira, 14,451; the highest of the Pyrenees, 11,283; the highest mountain in Italy is Etna, 10,963.

VIII PRIESTS of the PONTIFICAL COLLEGE. The Romans had a college of pontiffs, consisting of eight, four of them chosen from the patricians, and four from the plebeians. Over these presided a sovereign pontiff, or *pontifex maximus*, whose function it was to prescribe those ceremonies with which each god was to be worshipped, compose rituals, direct the vestals, regulate the calendar, and settle the different games, and assist at them, and perform the business of augury. He also consecrated the statues of the gods, before they were placed in the temples, conducted the dedications of their temples, and compiled their statutes.

Numa instituted this college; and Sylla the dictator afterwards increased the number of pontiffs to fifteen.

VIII ORDERS of CLERGY. In England the term clergy comprehends all persons in holy orders, and also in ecclesiastical offices; viz. *archbishops*, *bishops*, *deans and chapters*, *archdeacons*, *rural deans*, *rectors*, *vicars*, and *curates*. Parish clerks are sometimes in orders.

This venerable body of men, being separated and set apart from the rest of the people, in order to attend the more closely to the service of Almighty God, have several privileges allowed them by our municipal laws; and those privileges were formerly much greater than they have been since the reformation, at which time they were abridged, on account of the ill use which the popish clergy had endeavoured to make of them. For, as the laws exempted them from almost every personal duty, they attempted to obtain for themselves a total exemption from every secular tie; and, as it has happened in other cases, by extending their claims too far, they either lost or ceased to enjoy those liberties which of right belonged to them. The personal exemptions, however, for the most part, are still continued.

The privileges of the English clergy, confirmed to them by Magna Charta, and by the ancient statutes, are very considerable. Their goods are to pay no toll in fairs or markets; they are exempt from all offices but their own; from the king's carriages, posts, &c.; from appearing at sheriff's tourns or frank-pledges; and are not to be fined or amerced according to their spiritual, but their temporal means.

VIII KINDS of COACHES; viz. *coach*, *chariot*, *landau*, *barouche*, *calash*, *landaulette*, and *barouchette*.

England lays claim to a very early use of coaches; but, whatever may be the denomination under which they are mentioned, it is most probable that the ancient vehicles of this kind were merely cars, or a superior sort of waggons.

In 1471, after the battle of Tewksbury, which decided the fate of king Henry VI., and that of the house of Lancaster, when others fled in different directions, the queen was found in her chariot, almost dead with sorrow. In 1487, on the occasion of a grand celebration of the feast of St. George at Windsor, in the third year of king Henry VII., the queen and the king's mother rode in a chaise, covered with a rich cloth of gold, drawn by six coursers, harnessed with the same cloth of gold; and twenty-one ladies, habited in crimson velvet, rode on white palfreys.

In 1555, Walter Ripon made a coach for the earl of Rutland, which was the first that was ever used in England; and in 1564, the same Walter made the first hollow turning coach, with pillars and arches, for her majesty; and again, in 1584, he made a chariot-throne, with four pillars behind, to bear a canopy, with a crown imperial on the top, and before, two lower pillars, on which stood a lion and dragon, the supporters of the arms of England. Within the period of twenty years after this time, they became common among the nobility and other persons of rank. The duke of Buckingham, the favourite of two kings, was the first person who rode in a coach drawn by six horses, in 1619; in ridicule of which novel pomp, the earl of Northumberland put eight horses to his carriage.

Hackney-coaches first began to ply in the streets of London, or rather waited at inns, in 1625, and were only twenty in number; but they were so much increased in 1635, that king Charles issued an order of council for restraining them.

Sedan-chairs, which are under the same laws and regulations as hackney-coaches, were first licensed in 1634, when Sir Saunders Duncomb obtained the sole privilege of letting them to hire for fourteen years.

The first sedan-chair seen in England was in the reign of James I., and was used by the duke of Buckingham, to the great indignation of the people, who exclaimed that he was employing his fellow-creatures to do the service of beasts.

VIII CHARACTERS or properties of GLASS. Glass is an artificial concrete of salt and sand, or stones. The properties by which it is distinguished from all other bodies are these:

1. Fusible by a strong fire, in which it does not waste or consume, and when fused is tenacious and coherent.

2. Ductile, when red hot, and fashionable into any form, but not malleable; and capable of being blown into a hollowness, which no mineral is.

3. Frangible, when thin, without annealing.

4. Friable, when cold, but not calcinable.

5. Flexible and elastic.

6. Diaphanous always, whether hot or cold.

7. Receives colour or dye, both externally and internally, which neither acids, juices, nor any other matter can extract.

8. Not dissolvable by aqua-fortis, aqua-regia, or mercury; but said to be dissoluble by cold and moisture. Neither loses weight nor substance by the longest and most frequent use.

Besides these, glass has other peculiar qualities. It is only capable of being graven or cut with a diamond, or other hard stones, and emery. It gives fusion to other metals, and softens them, and is in itself the most pliable of all substances.

An open glass of water, in the summer-time, will gather drops of water on the outside, just so far as the water on the inside reaches. A drinking-glass, partly filled with water, and rubbed on the brim with a wet finger, yields musical notes, higher or lower, as the glass is more or less full. Glass is a non-conductor of electricity.

The materials used in the composition of glass are some saline substance, and some siliceous earth.

The first ingredient we shall specify is silex or stone. The best is that which will melt, and which is white and transparent. It is that that gives consistence and firmness to the glass. This is found principally in Italy, being a sort of stony substance called *tarso:* the next is *puocoli*, or *cuogola*, a sort of pebbles found at the bottom of rivers, and gathered for the Venetian manufacture out of the river Po, which are said not to be inferior in whiteness to alabaster.

Indeed, nothing makes finer and clearer glass than common flint, distinguished for this use by its clear transparent black colour; this, before it is used, must be heated red hot, and then immediately quenched in cold water. The heat whitens it, and the water causes it to split in every direction, and facilitates the grinding of it. The charge of preparing this, deters the glass-men from using it. The rounded fragments of quartz, found in the beds of rivers among mountains, are sometimes used in foreign countries, being first heated and ground to powder. Indeed, the preparation necessary for stone in general is to calcine, powder, and searce it.

The second ingredient in the manufacture of glass is an alkali, which is either soda or pot-ash. It is always used at first in the state of carbonat, though the carbonic acid flies off in the process. These alkalies are used in different degrees of purity, according to the required quality of the glass. The finest sort of glass requires the best pearl-ashes, purified by solution and evaporation to dryness; but for inferior glasses, coarser alkalies, such as barilla, wood-ashes, and kelp, are employed. The ashes of fern will also yield a salt; and those of cole-worts, bean-stalks, rushes, and many other plants, may be used for the like purpose.

The origin of glass is of great antiquity: one writer, De Neri, asserts that it is as ancient as Job.

The first time we hear of glass among the Romans was in the time of Tiberius, when Pliny relates that an artist had his house demolished for making glass flexible; though Petronius Arbiter and some others assure us that the emperor ordered the artist to be beheaded for his invention.

St. Jerome (A. D. 422) speaks of windows formed of glass, melted into thin plates, as being used in his time.

According to venerable Bede, artificers skilled in making glass were brought over into England, in the year 674, by Abbot Benedict, who were employed in glazing the church and monastery of Weremouth. According to others, they were first brought over by Wilfrid or Wigfrid, bishop of Worcester, about the same time, or, as others think, at a later period, A. D. 726. Till this time, the art of making glass, or at least, of applying it to this purpose, was unknown in Britain, though glass windows did not begin to be used before the year 1180: till this period, they were very scarce in private houses, and considered as a kind of luxury, and as marks of great magnificence. Italy had them first, France next, from whence they came into England.

Venice for many years excelled all Europe in the fineness of its glasses; and in the thirteenth century the Venetians were the only people who had the secret of making crystal looking-glasses, and which they performed by blowing, much in the same manner as a considerable quantity of the common mirror-glass is now manufactured. The great glass works were at Muran, or Murano, a village near the city, which furnished all Europe with the finest and largest glasses.

The glass manufacture was first begun in England in 1557. The finer sort was made in the place called Crutched Friars, in London; the fine flint-glass, little inferior to that of Venice, was first made in the Savoy-house, in the Strand, London. This manufacture appears to have been much improved in 1635; when it was carried on with sea-coal, or pit-coal, instead of wood, and a monopoly was granted to Sir Robert Mansell, who was allowed to import the fine Venetian flint-glasses for drinking, the art of making which was not brought to perfection before the reign of William III. But the first glass plates, for looking-glasses and coach-windows, were made in 1763, at Lambeth, by the encouragement of the duke of Buckingham; who, in 1670, introduced the manufacture of fine glass into England, by means of Venetian artists, with amazing success. So that, within a century past, the French and English have not only come up to, but even surpassed the Venetians; and we are now no longer supplied from abroad.

VIII BRANCHES of CHEMISTRY. The subjects of chemical science are so extensive as to require some classification, that their very magnitude may be understood. They are arranged under the following heads:

1. *General Chemistry, both theoretical and practical.* The theoretical includes the philosophy of chemistry, or chemical affinity, and those extensive, but not, properly speaking, general systems, by which ingenious men have at different times, and with various success, endeavoured to link together a large number of chemical phænomena. The practical part comprehends, in general, the action of all the simple substances on each other.

2. *Pneumatic Chemistry,* the investigation of which requires a peculiar set of apparatus, and includes all the particulars relative to those substances that exist in a state of elastic fluidity.

3. *Metallurgical Chemistry,* which treats of the assay of metallic ores, and their reduction to the regaline state, both in the small and great way.

4. *Mineralogical Chemistry,* or the method of analysing minerals, including under this term both the stony minerals and mineral waters.

5. *Animal Chemistry,* including the analysis and properties of all the products of animalisation, and the consideration of those vital functions, which, like respiration, appear to be for the most part decidedly chemical.

6. *Vegetable Chemistry,* comprehending not only an acquaintance with the products of vegetation, but with such

parts of the physiology of plants as can be explained or illustrated by the chemical action of their food, and those atmospheric influences to which they are exposed.

7. *Meteorological Chemistry*, including the chemical analysis of the atmosphere, and the whole subject of endiometry, as well as the connexion of chemical agency with all the meteoric phenomena.

8. *Technical Chemistry*, or the principles and processes of arts and manufactures, which are for the most part purely chemical; such as dyeing, bleaching, the manufacture of glass, porcelain, and pottery, tanning, and the preparation of spirituous fermented liquors.

The science of chemistry is comparatively of late origin, although many chemical arts, such as metallurgy, pharmacy, cookery, the preparation of vinous liquors, dyeing, tanning, glass-making, &c. can boast of a very high antiquity. Neither among the ancient Egyptians, Greeks, or Romans, till after the age of Constantine, are there any traces of chemistry, unless some obscure and idle speculations about the four elements, as entering into the composition of natural bodies, may be dignified with this appellation. For this a double cause may be assigned. In the first place, it was not the habit of the age to make experiment precede theory; and in the second place, hardly any of the agents that are even the most indispensable in chemical inquiries were as yet discovered. None of the acids were known, except the acetous; and of the alkalies, soda was the only one of which even a very imperfect knowledge had as yet been obtained. The conquests of the Saracens in the seventh and eighth centuries, destructive as they were to the religion and civilisation of those countries which they occupied, appear to have given the first serious impulse to the study of chemistry in the west. Rhazes, Avicenna, Geber, and other Arabian physicians, introduced to the notice of Europe many pharmaceutical preparations, both vegetable and mineral, and made great improvements in the mode of conducting processes, particularly distillations. The three mineral acids were discovered; the vegetable and mineral alkalies were distinguished from each other; the preparation of alcohol was made known; the activity of the newly-discovered menstrua was directed upon the metals; and the golden age of alchemy commenced.

The conversion of the baser metals into gold was now the object that for the most part occupied the attention of chemists for several centuries, and an immensity of time, labour, and ingenuity was wasted in this visionary pursuit; it was attended, however, with this incidental advantage, that a considerable dexterity of operating was thus acquired, and many new substances and valuable facts were discovered, which perhaps without this strong incentive would have remained much longer in obscurity. In the 15th century, when the ardour of alchemy began to decline, a fresh motive for chemical pursuits began to be developed by the happy application of them to the improvement of medicine. This was chiefly owing to a German monk, of the name of Basil Valentine, who in his "Currus Triumphalis Antimonii" communicated to the public a number of valuable antimonial medicines, and discovered the volatile alkali. The success attending these new preparations, the controversy which they occasioned, and the recent discovery of the art of printing, all contributed to give a vigour to chemistry, which it had never felt before; and from this period its progress was rapidly accelerated.

VIII METEOROLOGICAL INSTRUMENTS. Meteorology is a science which treats of the weather, or of the various affections and phenomena of the atmosphere, as winds, clouds, rain, hail, snow, dew, thunder, and lightning, &c. The principal instruments of use in Meteorology are,

The BAROMETER, by which the weight or pressure of the atmosphere over any place is known; the THERMOMETER, which ascertains the temperature of the air; the HYDROMETER, to denote the moisture or dryness of the air; the PLUVIAMETER, or rain-guage, to measure the depth of rain that falls; the EVAPORATION GUAGE, to show the depth of water evaporated; the WIND-DIAL, to point out the direction of the wind; the ANEMOMETER, to measure its force; and the ELECTROMETER, to ascertain the kind and intensity of electricity in the air.

According to the laws of statics, the air which is less rarefied or expanded by heat, and consequently is more ponderous, must have a motion towards those parts of it which are more rarefied and less ponderous, to bring it to an equilibrium; also the presence of the sun, continually shifting to the westward, that part towards which the air tends, by reason of the rarefaction made by the greatest meridian heat, is with him carried westward; and, consequently, the tendency of the whole body of the lower air is that way. Thus the easterly wind is formed; and to similar principles the other winds may be traced.

Clouds are constituted of an infinite number of very minute drops of water; they are formed by the condensation of steam or vapour by cold.

Whenever two currents of air of different temperatures meet and intermix, each of which is previously near the point of saturation with vapour, or whenever a body of atmospheric air is suddenly cooled (as by the rarefaction occasioned by the stroke of an air-pump, or by opening the cock of a condensing engine), a cloud is formed, and a precipitation often ensues. The precipitation is in the form of rain, if the temperature be above 32° Fahrenheit; but in the form of snow, if the temperature be below the said degree. Rain or snow is ordinarily observed in all latitudes; but in the torrid zone the latter is confined to the summits of the highest mountains. Hail is an extraordinary form in which the vapour is precipitated; it seems to arise from an inversion of the strata of the atmosphere, by which a cold stratum is placed beneath a warmer one, contrary to the general disposition of the atmosphere. Rain is formed in the upper stratum, and this falling through the under stratum is cooled and frozen, receiving at the same time a considerable accession from the condensation on the surfaces of the frozen drops. Hail-showers occur in all seasons of the year, but more rarely in the summer months; they, however, sometimes accompany thunder in those months, and are peculiarly destructive and formidable. Hail seems to be confined principally to the temperate zones: it is probable that in this quarter of the globe hail is seldom observed except between the parallels of 40° and 60° of latitude. It is more frequent in mountainous places than on plains; in the former, hail-showers usually occur on five or six days of the year at an average.

Dew is formed when, instead of cold air mixing with warm, a cold solid or liquid body is presented to (comparatively) warm air. There exists a determinable temperature at all times, which is just capable of supporting the vapour of the atmosphere in an elastic state. If the temperature of the cold body be below this, then the vapour of the atmosphere is gradually condensed into water on its surface; this is a well-known phenomenon, and presented on various occasions. The dew on the grass, and the hoar on walls after the breaking of a frost, are two of the more striking appearances of this kind.

VIII MOST USEFUL SCIENCES. Perhaps the most useful of all the sciences are the following eight, whether considered as contributing to our immediate necessities, or as the means of acquiring national wealth.

1. Agriculture. This useful and important science, though less splendid than many others, attracted in the earliest periods of the world the attention of mankind; nor is it extraordinary that it should, when we consider that their very existence at those times depended upon its cultivation. When the means of subsistence were procured by the bow or the chase, men found the toil and hazard infinite, and the result of their labours precarious; it was, therefore, natural that they should turn their minds to other objects; and none presented such fair prospects of affording them the necessaries of life as the fertility of the earth.

The Chaldeans are found to have carried this valuable art to a considerable degree of advancement, as they cultivated their lands with great assiduity, and enjoyed the pleasing satisfaction of receiving from their fields plentiful harvests. The Egyptians also, who, from the fertility of their country, caused by the annual overflowings of the Nile, raised prodigious quantities of corn, were so sensible of the blessings resulting from agriculture, that they ascribed the invention of it to Osiris, and even carried their superstitious gratitude so far as to worship those animals that laboured in tilling the ground. The Phœnicians were also famous for their skill in agriculture; but finding themselves too much confined in their native country, by the conquests of neighbouring nations, they spread themselves through the greater part of the islands of the Mediterranean, and carried with them their knowledge in husbandry. The Carthaginians, following the taste of their ancestors, are said to have applied themselves assiduously to the study of agriculture. The art of sowing corn, and the tillage of land, were probably invented in Sicily ; as that island was very fruitful in corn, and agriculture was there esteemed so honourable an employment, that even their kings did not disdain to practise it with their own hands. The Athenians, who were the first people who received any tincture of politeness, taught the use of corn to the rest of the Greeks ; they also taught them the manner of cultivating the ground, and preparing it for seed. The Greeks soon perceived that bread was more wholesome, and its taste more delicate than acorns, and accordingly thanked the gods for such an unexpected and beneficial present. After this, the Athenian kings, thinking it more glorious to govern a small state wisely than to aggrandise themselves by foreign conquests, withdrew their subjects from war, and employed them solely in cultivating the earth. This constant application carried agriculture to a considerable degree of advancement, and reduced it into a more perfect art.

The ancient Romans esteemed the employment of agriculture so honourable, that, in the earliest times of the republic, the highest praise that could be given to a man, was to say of him that he cultivated well his own spot of ground. The most illustrious senators applied themselves to this profession, nor had they either splendour or majesty but when they appeared in public; and their greatest generals, at their return from the toils of war, from taking of cities and subduing of nations, were impatient till they were again employed in cultivating their lands; and thought it no disgrace to follow the plough, though they were at the same time prepared to serve the wants of the republic, attend her councils, or put themselves at the head of her armies. It must indeed be allowed, that when the Romans became tainted with the luxuries of Asia, they gradually lost the noble simplicity of their ancestors, and employed their slaves in the severer labours of a country life. But though they did not themselves hold the plough, yet even men of consular dignity looked upon it as a reward for their public services, when they obtained leave to retire into the country; and were equally respected when overlooking their farms as when seated in the chair of magistracy. M. Cato, the censor, that illustrious Roman general, orator, politician, and lawyer, after having governed provinces, and subdued nations, did not think it below his station to write a large treatise on agriculture.

2. Commerce. The mutual convenience of an exchange of commodities must have been evident almost as soon as any part of mankind had acquired an idea of distinct property; the difficulty of communication between different countries, however, long rendered commercial intercourse very limited and uncertain. The dangers attending long journeys induced those who engaged in trading to distant parts, to associate together for mutual assistance and defence; and these companies of merchants, or caravans, were well adapted for the improvement of commerce, from the information which the individuals composing them would communicate to each other, and the connexions they might occasionally form. In the book of Genesis mention is made of the companies or caravans of Ishmaelite merchants, trading in spices from Gilead into Egypt; to one of whom Joseph was sold, about 620 years after the flood. But this mode of communication between different countries was insufficient for the enterprising spirit of commercial adventurers: remote countries cannot convey their commodities by land to those places where, on account of their rarity, they are most desired, and consequently become most valuable. It was not till some progress had been made in the art of navigation, that the power was acquired of transporting with facility the superfluous stock of one part of the earth to supply the wants of another part, and that the active spirit of commerce could extend its multifarious concerns to all the known parts of the globe.

The Egyptians, soon after the establishment of their monarchy, are said to have opened a trade between the Arabian Gulf, or Red Sea, and the western coast of the great Indian continent. The commodities which they imported from the East were carried by land from the Arabian Gulf to the banks of the Nile, and conveyed down that river to the Mediterranean; but the maxims and manners of Egypt were inimical to commerce, and this profitable traffic soon declined.

The situation and circumstances of the Phœnicians naturally led them to look to commerce as the only source from which they could derive opulence or power; and accordingly the foreign trade carried on by them, particularly from Sidon and Tyre, became more extensive and important than that of any state in the ancient world. Their ships not only frequented all the ports in the Mediterranean, but they were the first who ventured beyond the ancient boundaries of navigation, and passing the Straits of Gibraltar, visited the western coasts of Spain and Africa. They revived a commercial intercourse with Arabia and the continent of India on the one hand, and with the eastern coast of Africa on the other; the cargoes which they purchased in Arabia, Ethiopia, and India, being landed at Elath, the safest harbour in the Red Sea towards the north: thence they were carried by land to Rhinocolura, the distance not being very considerable, and, being reshipped in that port, were transported to Tyre, and distributed over the world.

The wealth which the Phœnicians acquired by monopolising the commerce of the Red Sea incited their neighbours, the Jews, under the prosperous reigns of David and Solomon, to aim at being admitted to some share of it. Solomon fitted out fleets, which, navigated by Phœnician pilots and mariners, sailed from the Red Sea to Tarshish and Ophir, whence they brought such valuable cargoes as suddenly diffused wealth and splendour through the kingdom of Israel. But the institutions of the Jews were by no means favourable to commerce, which was never carried to any great extent by them while they inhabited Judea.

The Carthaginians applied themselves to commerce and navigation with ardour, ingenuity, and success; but as the Phœnicians had engrossed the commerce of India, their adventures were chiefly made to the west and north. Following the course which the Phœnicians had opened, they extended their voyages beyond the shores of the Mediterranean, visiting not only all the coasts of Spain, but those of Gaul, and penetrating at last to Britain. They made voyages of discovery in different directions, and thus established a commercial intercourse with places which before were wholly unknown; but whatever knowledge of this kind they acquired, it was concealed from the inhabitants of the other states with the utmost care.

The Greeks, although their country was almost encompassed by the sea, which formed many spacious bays and commodious harbours, and though it was surrounded by a number of fertile islands, were, notwithstanding such a favourable situation, a long time before they attained any perfection in navigation. They scarcely carried on any commerce beyond the limits of the Mediterranean. Their chief intercourse was with the colonies of their countrymen planted in the Lesser Asia, in Italy, and in Sicily. They sometimes visited the ports of Egypt, of the southern provinces of Gaul, and of Thrace, or, passing through the Hellespont, they traded with the countries situated round the Euxine Sea. The expedition of Alexander into the East considerably enlarged the geographical knowledge of the Greeks. He had observed the resources which commerce creates, in the exertions of the republic of Tyre, and therefore it became part of his plan to render the empire which he proposed to establish the centre of commerce as well as the seat of dominion. With this view he founded Alexandria near one of the mouths of the Nile, that, by the Mediterranean Sea and the neighbourhood of the Arabian Gulf, it might command both the trade of the East and West. This situation was so judiciously chosen that Alexandria soon became the chief commercial city in the world. Not only during the subsistence of the Grecian empire in Egypt and in the East, but amidst all the succeeding revolutions of those countries, commerce, particularly that of the East Indies, continued to flow in the channel which the sagacity of Alexander had marked out for it, till the discovery of the navigation by the Cape of Good Hope opened a more expeditious and independent channel to all the maritime states of Europe.

In the early periods of the Roman history, commerce appears to have been much neglected and undervalued; it seems to have been thought a degrading employ by this military people, and to have been left almost entirely in the hands of the natives of the countries they conquered. The extent, however, of the Roman power, which included the greatest part of the known world, the vigilant inspection of the Roman magistrates, and the spirit of the Roman government, no less intelligent than active, gave such additional security to commerce as animated it with new vigour; and as soon as the Romans acquired a taste for the productions of other countries, commerce, particularly the trade with India through Egypt, was pushed with new vigour, and carried on to a greater extent. The pilots who sailed from Egypt to India first ventured to quit sight of the shore, and, depending wholly on the trade-winds, boldly sailed from Ocelis, at the mouth of the Arabian Gulf, across the ocean, to the coast of Malabar, returning with the eastern monsoon, and thus procuring the spices and other rich commodities of the continent and islands of the farther India, which were brought to the port of Musiris by the Indians themselves. The commerce thus carried on will appear considerable, even in the present age, as the trade of India is said to have drained the Roman empire every year of more than four hundred thousand pounds, and that one hundred and twenty ships sailed annually from the Arabian Gulf to that country. The reign of Augustus was very favourable to commerce, as the peace which then prevailed over the civilised part of the world enabled the merchants to pursue it unmolested. Under Tiberius, we find the Romans extending their protection to the north, and the town of Havern, the most ancient in Friesland, founded. Under Nero, the capital of England is first mentioned as a considerable place. Tacitus, who lived for some time at London, says, it was famous for its many merchants, and the abundance of its merchandise. Rome, however, as the seat of wealth and luxury, continued to be the metropolis of the commercial world until the fourth century, when Constantine removed the seat of empire to Constantinople, and made it the emporium of commerce. This city was undoubtedly well adapted for that honour; it was favoured by nature with a fine climate, and in a most advantageous situation for carrying on an extensive correspondence with every part of the world then known.

The first mention of the city of Antwerp, afterwards so famous for its trade, is in the year 517, when Theodoric expelled the Danes from it. Some towns in England, as Chichester and Abingdon, are said to have been founded about this time, which shows that trade and manufactures were gaining ground in this country.

8. NAVIGATION. History represents the Phœnicians, especially those of their capital, Tyre, as the first navigators; being urged to seek a foreign commerce by the narrowness and poverty of a slip of ground they possessed along the coasts, as well as by the conveniency of two or three good ports, and by their natural genius for traffic.

Accordingly, Lebanon, and the other neighbouring mountains, furnishing them with excellent wood for ship-building, in a short time they were masters of a numerous fleet; with which, constantly hazarding new navigations, and settling new trades, they soon arrived at an incredible pitch of opulency and populousness, having made themselves masters of several commodious harbours toward the bottom of the Arabian Gulf; and, after the example of the Egyptians, established a regular intercourse with Arabia and the continent of India, on the one hand, and with the eastern coast of Africa on the other. So that they were in a condition to send out colonies, the principal of which was that of Carthage; which, keeping up their Phœnician spirit of commerce, in time not only equalled Tyre itself, but vastly surpassed it; pursuing the course which the Phœnicians had opened, and sending its merchant fleets through Hercules' Pillars, now the Straits of Gibraltar, along the western coast of Africa to the south, almost to the tropic of Cancer, having discovered the Fortunate Islands, now known by the name of the Canaries, which were the utmost boundary of ancient navigation in the western ocean; and to the north along the coast of Europe, visiting particularly Spain, Gaul, and Britain.

Tyre, whose immense riches and power are represented in such lofty terms, both in sacred and profane authors, being destroyed by Alexander the Great, its navigation and commerce were transferred by the conqueror to Alexandria, a new city, admirably situated for those purposes, proposed for the capital of the empire of Asia, which Alexander then meditated. And thus arose the navigation of the Egyptians; which was afterwards so cultivated by the Ptolemies, that Tyre and Carthage (which last, after having a long time disputed empire with the Romans, was at length subdued) were quite forgot.

Egypt being reduced into a Roman province after the battle of Actium, its trade and navigation fell into the hands of Augustus; in whose time Alexandria was only inferior to Rome: and the magazines of the capital of the world were wholly supplied with merchandises from the capital of Egypt.

At length, Alexandria itself underwent the fate of Tyre and Carthage, being surprised by the Saracens, who, in spite of the emperor Heraclius, overspread the northern coasts of Africa, &c., whence the merchants being driven, Alexandria has ever since been in a languishing state; though still it enjoys a considerable part of the commerce of the Christian merchants trading to the Levant.

The fall of Rome and its empire drew along with it not only that of learning and the polite arts, but that of navigation; the barbarians, into whose hands it fell, contented themselves with the spoils of the industry of their predecessors.

However, one circumstance prevented commercial intercourse with distant nations from ceasing altogether. Constantinople, though often threatened by the fierce invaders, who spread desolation over the rest of Europe, was so fortunate as to escape their destructive rage. In this city the knowledge of ancient arts and discoveries was preserved; and commerce continued to flourish there, with the taste for elegance, and the luxuries of foreign countries, when it was almost extinct in every other part of Europe.

It does not appear which of the European people first applied themselves to navigation. Some think it began with the French; though the Italians seem to have the best title to it, and are generally looked on as the restorers of this science, as well as the polite arts, which had been banished together, from the time the empire was torn asunder.

The people of Italy, then, and particularly those of Venice and Genoa, have the glory of this restoration; and it is to their advantageous situations for navigation they in a great measure owe this glory.

The crusades contributed in a great measure to the revival of navigation; for the Genoese, the Pisans, and Venetians furnished the transports which carried those vast armies, composed of all the nations in Europe, into Asia, upon this wild enterprise, and likewise supplied them with provisions and military stores.

Other travellers, besides those whom religious zeal sent to visit Asia, ventured into remote countries from the prospect of commercial advantage, or from motives of mere curiosity. The first and most eminent of these was Marco Polo, a Venetian of a noble family, about the year 1269; he was succeeded about a half a century after by Sir John Mandeville, an Englishman. But the present art of navigation owed its rise to the invention of the mariner's compass, in the beginning of the fourteenth century; and made considerable progress during the voyages that were begun in the year 1418 by Henry, duke of Viseo. This learned prince, brother to Edward, king of Portugal, was particularly skilled in cosmography, and employed a person from the island of Majorca to teach navigation, and to make instruments and charts for the sea. These voyages being greatly extended after the discovery of Porto Santo and Madeira, the art was improved under the succeeding monarchs of that nation; insomuch, that Roderic and Joseph, physicians to king John II., together with one Martin de Bohemia, a Portuguese, native of the island of Fayal, scholar to Regiomontanus, about the year 1485, calculated, for the use of the sailors, tables for the sun's declination, and recommended the astrolabe for taking observations at sea. About this time Columbus, a native of Genoa, having thoroughly acquainted himself with the discoveries and observations of the Portuguese, and having also acquired considerable experience in the art of navigation, made a proposal to king John II. of exploring a passage to India by sailing directly towards the west, across the Atlantic Ocean. John rejected this proposal in a very dishonourable manner; and Columbus instantly quitted the kingdom, and, landing in Spain towards the close of the year 1484, he resolved to propose his plan to Ferdinand and Isabella; with whom, after repeated application and long delay, he ultimately succeeded. In August, 1492, Columbus, furnished with a small armament of three ships, set sail, and steered directly for the Canary Islands; thence, holding his course due west, he stretched away into unfrequented and unknown seas. After many difficulties, he at length arrived at Guanahani, one of the large cluster of islands called the Lucaya, or Bahama Isles He also discovered Cuba, Hispaniola, and several other small islands; and having left a small colony in a fort at Hispaniola, returned to Spain in March 1493. In September following, he set out on his second voyage, and sailed by the Leeward Islands to Hispaniola. In a third voyage, undertaken in the year 1498, he discovered the continent of America.

4. TRADE and commerce are alike in principle, namely, the interchange of commodities, or the disposal of produce of any kind for other articles, or for some representative of value, for which other articles can be obtained, with a view of making a profit by the transaction. The term commerce is restricted to the mercantile intercourse between different countries: the internal dealings between individuals of the same country, either for the supply of immediate consumption, or for carrying on manufactures, is denominated *trade*.

5. MANUFACTURES. The manufacture of *Cotton* and of *Wool* are two of the leading and most important branches of our national industry. They are concisely treated of in this work, under the head of *ten sorts* of *Wool*. *Silk* will also be found under *Silk-worm*. Steel and cutlery are branches of English manufactures which have arrived at the highest degree of perfection and celebrity.

Steel is a most valuable metal, consisting of iron combined with carbon. It is chiefly used for edged-tools, and other cutting instruments, and from its fine polish is used in ornaments of various kinds. In chemistry it is called a carburet of iron. Its hardness is greater than that of iron, and its most valuable property is that it can be made harder than any other metal, by suddenly cooling it when heated to redness: also if it is heated a lower temperature than redness, and suddenly cooled, it becomes the most elastic of metals. It is of a darker colour when polished, and retains its polish much longer, not being so liable to oxidate.

Steel is manufactured by two processes; one in which the steel is made from pig-iron at once in the finery: this is practised in Germany, and is called natural steel. Cemented steel is formed by stratifying bars of iron with powdered charcoal in a close vessel, and by keeping the mass at a brisk red heat for a longer or shorter time, depending upon the size of the bars. This process is called *conversion;* the test of the conversion being complete in its blistered appearance, from which it has been called *blistered* steel. *Cast* steel is blistered steel fused and cast into ingots, which are afterwards drawn into rods by the hammer, or by rolling. By this change the steel becomes much harder, and of course entirely free from those seams and other defects which exist in the blistered steel; this is what renders cast steel so much better for polished goods; for when blistered steel is attempted to be polished, the surface is seen to abound with spots arising from mechanical defects in the bars previous to *conversion*.

The steel known by the name of *Shear-steel* has been so called from its application to the cutting part of sheep or wool-shears.

Cutlery comprises knives, forks, razors, scissars, and every kind of cutting instrument, whether made of steel or of iron, with steel to form the edge.

Every other sort of manufacture has been most advantageously followed and greatly improved; but the foregoing are those for which England is distinguished beyond all the world besides. Perhaps nothing has tended more to the improvement, or accelerated the progress of the manufactures of this country, so much as machinery, and particularly the steam engine, an invention in the highest degree creditable to human genius, and which may be reckoned the most valuable application of philosophical principles to the arts of life. The steam-engine has been wholly invented and brought into general use by our own countrymen within the space of a single century.

The force of the steam-engine is derived from the property of water to expand itself, in an amazing degree, when heated above the temperature at which it becomes changed into steam, or vapour, which being an exceedingly elastic fluid, it can be retained within the close vessel or boiler to which the heat is applied, even when it has an expansive force sufficient to make it fill, if left at liberty, twenty or thirty times the space in which it is confined. In this state the steam will exert a proportionate force or pressure, to burst open the sides of the vessel in which it is retained; which force may be applied, either to expel or raise up water from any vessel into which the confined steam is admitted, or to give motion to a moveable piston, which is so accurately fitted to the interior capacity of such vessel as not to permit the escape of the steam between them.

Another source of the power of the steam-engine is the facility with which steam of a great expansive force can be cooled by the application of cold water, and condensed into the small quantity of water from which it was originally produced. A partial vacuum can thus be made, in a very large vessel, in an instant, and even in the same vessel which was a moment before filled with confined steam, exerting a great force to escape. The pressure of the atmosphere which tends to fill up this vacuum can be made to produce the ascent of water into the vessel to any height less than twenty-four or twenty-five feet. Or the pressure of the atmosphere may be made to give motion to a piston, by admitting the atmospheric air to press upon one side of the piston, whilst there is a vacuous space formed by the condensation of the steam which filled the cylinder on the other.

The first steam-engine was invented by the marquis of Worcester; but it was only for raising water, and that by the expansive force of the steam alone. The next engine was by captain Savery, and operated, both by the expansive force and the pressure of the atmosphere, to fill up the vacuum which was produced by the condensation of the same steam, after it has ceased to operate by its expansion. The third inventor, Newcomen, abandoned the force of expansion, and only employed the condensation of the steam to obtain a vacuum, and cause the pressure of the atmosphere to act unbalanced by a piston fitted into a cylinder; and as the force was thus exerted upon a moveable piston, his machine is capable of being applied to give motion to pumps or other machines, whereas, his predecessors were obliged to confine themselves to the raising of water. Soon after this invention, engines were proposed with pistons, to be actuated by the expansive force of the steam only, without a vacuum. Lastly, Mr. James Watt invented the engines now in use, which are actuated both by the pressure of steam and the vacuum acting at the same time upon the opposite surface of the piston.

6. FOUNDERY, or the art of melting and casting all sorts of metals; particularly brass, iron, bell-metal, &c.

The art of casting statues in brass is too ancient, and its origin too obscure, even for the research of Pliny, an author admirably skilful in discovering the inventors of other arts. All we know is that it was practised in all its perfection by the Greeks, and afterwards by the Romans; and that the number of their statues consecrated to their gods and heroes surpass all belief. The cities of Athens, Delphos, Rhodes, &c. had each three thousand statues; and Marcus Scaurus alone, though only ædile, adorned the Circus with no less than three thousand statues of brass, for the time of the Circensian games. This taste for statues was finally carried to such a pitch, that it became a proverb, that in Rome the people of brass were not less numerous than the Roman people.

In England, casting of statues was but little known and practised before the seventeenth century.

Casting of *guns* is quite modern. All authors agree that the first cannon were cast in the fourteenth century, though some date them from 1338, and others 1380. Cannon were formerly made of very great length, which rendered them exceedingly heavy, and the use of them very limited and troublesome. There were some of them employed by the Turks in 1394, at the siege of Constantinople, then in possession of the Christians, and also in 1452, which threw a weight of 100 lbs.; but they could not stand repeated firing. Louis XII. had one cast at Tours of the same size, which threw a ball from the Bastile to Charenton. One of these extraordinary cannon was taken at the siege of Dien, in 1546, by Don John de Castro, and is now in the Castle St. Julian de Barra, ten miles from Lisbon. This cannon, which is twenty feet and seven inches long, and six feet three inches in diameter, was cast in 1400.

Formerly, strange names were given to cannon. Louis XII., in 1503, had twelve brass cannon cast of an extraordinary size, called after the twelve peers of France. The Spaniards and Portuguese named theirs after their saints. The Emperor Charles V., when he went against Tunis, had twelve cannon founded, which he called the twelve apostles. At Milan there is a seventy-pounder, called the Pimontelli; and there is one at Bois-le-duc, called the Devil. At Dover there is a sixty-pounder, called Queen Elizabeth's pocket-pistol. And there is an uncommon seventy-pounder in the Castle of St. Angelo at Rome, made of the nails that fastened the copper-plates which covered the ancient Pantheon.

The casting of *bells* is of a middle standing between the other two.

The origin of small bells is very ancient; but those of a large bulk, for towers, suspended by ropes, were introduced at a much later period.

Among the Jews it was ordained by Moses, that the lower part of the blue robe, which was worn by the high priest in religious ceremonies, should be adorned with pomegranates and gold bells intermixed at equal distances. (Exodus, xxviii. 33, 34.) The kings of Persia are said to have had the hem of their robes adorned with gold bells and pomegranates, like that of the Jewish high priests. The Arabian princesses wear on their legs large hollow gold rings, filled with small flints, which sound like bells when they walk; and these, with similar appurtenances, give notice that the mistress of the house is passing, so that the servants of the family may behave with respect, and strangers may retire, to avoid seeing the person who advances. Calmet supposes that it was with some such design, of giving notice that the high priest was passing, that he wore little bells at the hem of his robe; and it was also a kind of public notice that he was about to enter into the sanctuary. In the court of the king of Persia, no one entered the apartments without some warning; and thus the high priest, when he entered the sanctuary, desired permission to enter, by the sound of his bells, and in so doing he escaped the punishment of death, annexed to an unexpected intrusion. The prophet Zachary speaks of bells of the horses, which were probably hung to the bridles or foreheads of war-horses, that they might thus be accustomed to noise.

With the Greeks, those who nightly kept watch-rounds in camps or garrisons carried with them a little bell, which they rang at every sentry-box, to keep the soldiers appointed to watch awake. A bell-man also walked in funeral processions, at a distance before the corpse, not only to keep off the crowd, but to advertise the *flamen dialis* to keep out of the way, lest he should be polluted by the sight, or by the funeral music. The priest of Proserpine at Athens rung a bell to call the people to sacrifice. The hour of bathing at Rome was announced by the sounding of a bell; hence it has been supposed they were used to mark the hour of devotion, to call the people to church.

St. Paulinus was made bishop of Nola, in Campania, in 400, and he first brought the use of bells into churches.

Hieronymus Magius' treatise on bells, (written when in chains in Turkey, purely from memory), makes large bells a modern invention. Indeed, we do not hear of any before the sixth century, when they were first applied to ecclesiastical purposes, in some of the monasteries of Caledonia, as they were in those of Northumbria, before the conclusion of the seventh century; and they seem to have been used from the first creation of parish churches in this kingdom. In 1610, we are told, Lupus, bishop of Orleans, being at Sens, then besieged by the army of Clotharius, frightened away the besiegers by ringing the bells of St. Stephen's. The first large bells in England were introduced about the year 670. Turketulus, abbot of Croyland, who died about the year 870, gave a great bell to the church of that abbey, which he named Guthlac, and afterwards six others, all which rang together.

7. Mining. The tin of Cornwall was undoubtedly the first metal sought after in Britain, and probably the first article of commerce with other nations. The ores of tin, from their great weight, indicate their metallic contents, and yield them with the simplest treatment with fire; they are found at the most inconsiderable depths.

Lead is another metal, which is not only found near the surface, but the ores exhibit to the eye the appearance of metal, and in general yield their contents to the heat of a moderate fire. This metal, therefore, was probably an object of pursuit in the early ages of mining.

Copper, on the other hand, is seldom found without penetrating the earth to a considerable depth; and the proportion of metal in most cases of ores is so small, that a certain progress in the arts of mining and smelting must be presumed to have been made before it could have become an object of research. We believe this to have been the fact in most countries as well as this, where copper was certainly discovered by working of mines in pursuit of tin and lead.

The first important era in mining, was that in which the application of gunpowder to its purposes took place, which happened in Hungary or Germany about the year 1620, and was first introduced into England, at the copper-mine at Ecton in Staffordshire, about the year 1670, by some German miners brought over by Prince Rupert.

Mining in England had a very early origin, compared with the other arts in the country; it was the first source of trade, and it is believed that the Phœnicians were the first nation engaged in trading to Britain for tin. The metals of the country were unquestionably the principal temptation to the Roman conquerors.

The Saxons neglected the pursuit of the metals; but the Normans appear to have worked them to advantage; and from this time till King John the mines were mostly in the hands of Jews. Edward I. caused the Jews to be banished, and the mines were in consequence again neglected. Edmund, the elder son of that king, earl of Cornwall, willing to restore what had produced so large a proportion of the revenues of his domain, made grants important to the miners, which were confirmed by the king, by a charter in the 33d year of his reign.

The coal mines next claim our attention. Coals are found in several parts of the continent of Europe, but the principal mines are in this country. They have been discovered and wrought in Newfoundland, Cape Breton, Canada, and in some of the provinces of New England. China abounds in them, and they are well known in Tartary, and the island of Madagascar.

Coals are first mentioned as fuel by Theophrastus, who describes them as earthy substances, that burn like wood coals, and are used by the smiths. The ancient Britons had a primitive name for this fossil; and Pennant says, that a flint axe, the instrument of the aborigines of our island, was discovered in a certain vein of coal in Monmouthshire, and in such a situation as to render it very accessible to the inexperienced natives, who, in early times, were incapable of pursuing the seams to any great depths.

Although coals are so abundant in many of the above-named places, yet as there are no beds found in the whole extent of Italy, the great line of this fuel seems to sweep the globe from the north-east to the south-west, visiting Brabant and France, and avoiding Italy. The argument adduced by those who contend that the Romans, while they were in possession of this island, were ignorant of the use of coal, is that there is no name for it in the Latin language, the word carbo being always used for charcoal. Cæsar takes no notice of coal in his description of this island; yet there is good evidence to believe that the Romans brought it into use.

In the West Riding of Yorkshire are many beds of cinders, heaped up in the fields, in one of which a number of Roman coins were found some years ago.

There is a colliery near Newcastle-upon-Tyne, supposed to have been actually worked by the Romans; and it is evident from Whitaker that coals were used as fuel in this country by the Saxons. No mention is made of this fossil during the Danish usurpation, nor for many years after the Norman conquest.

The first charter for the license of digging coals was granted by king Henry III., in the year 1239. It was there denominated sea-coal, and in 1281 Newcastle was famous for its great trade in this article; but in 1306 the use of sea-coal was prohibited in London, from its supposed tendency to corrupt the air. Shortly after this, it was the common fuel at the king's palace in London; and in 1325, a trade was opened between France and England, in which corn was imported and coals exported.

About the beginning of the 16th century the best coals were sold in London at the rate of 4*s*. 1*d*. per chaldron. Queen Elizabeth, in the year 1582, obtained a lease of a grant of part of the mines of Durham, for ninety-three years, at the annual rent of 90*l*., which occasioned an advance on the price of coals; it was afterwards assigned to Thomas Sutton, the founder of the Charter-house in London, who assigned it to the corporation of Newcastle for the sum of 12,000*l*.; and the price of coals was immediately advanced to seven shillings per chaldron.

In 1615, there were employed in the coal trade of Newcastle 400 sail of ships; one half of which supplied London, the remainder the other parts of the kingdom.

By a calculation made about twenty years ago it appeared, that on the rivers Tyne and Wear only, nearly 65,000 people were employed in this trade.

8. BUILDING having been brought under our notice as a "Fine Art," and its history and elements rather copiously mentioned, under the head of V. ORDERS of ARCHITECTURE, we shall here take a view of it as one of the useful arts.

The art of building claims the highest antiquity. Clothing is rejected or dispensed with by some savages; and in some favoured climates the arts of procuring food are rendered almost unnecessary by the unsolicited bounty of nature; but we are acquainted with no people who do not form dwellings, places of shelter and security during the night, of assembly to the family, and storehouses of the property, however trifling. It is not even confined to man: birds, beasts, and insects have their architecture; but their modes, inspired by instinct, are invariable as the operations of nature. To man alone is given the principle of improvement.

The forms and methods of building depend essentially on the nature of the materials furnished by the country, and the state of civilisation of its inhabitants. Accordingly, nations very remote in situations, and distant in time, have resembled one another in these particulars. Vitruvius relates that the Colchians, in the kingdom of Pontus, where they abounded in forests, fixed trees in the earth, close together in ranks, to the right and left, leaving as much space between them as the length of the trees would permit. Upon the ends were others laid transversely, which enclosed the space for habitation in the middle; then at the top the four angles were braced together with alternate beams, and the roof was also formed by beams laid across from the extreme angles, gradually converging, and rising from the four sides to the middle point at the top, covered over with boughs and loam. In this manner were the log-houses of the American settlers constructed. The Phrygians who inhabited a champaign country, destitute of timber, selected little natural hills, excavated them in the middle, dug an entrance, and widened the space within as much as the place would permit. Above they fixed stakes in a pyramidal form, and covered them with reeds or straw, heaping thereon great piles of dirt. The habitations thus described resemble very nearly the subterraneous dwellings of the Samoiedes and Greenlanders. The kind of cabin, however, most frequently found among barbarous nations, is of a conical shape, formed by branches of trees interlacing one another, and meeting in a point at the summit, their exterior surface being covered with reeds, leaves, or with clay. Such are the wig-wams of the North American Indians, and the kraals of the Hottentots and Caffres.

The edifices of the Egyptians, which are regarded as the earliest structures of wrought stone, are also the most distinguished in that method. The immense quarries of Egypt probably inspired the taste, as they furnished the materials; while the periodical overflows of the Nile facilitated their transport.

The inhabitants of countries having no stone quarries supplied the deficiency by means of bricks. These were at first used crude, being merely dried by the sun during a considerable time; but at length the manufacturers found the method of baking them, to form bricks as solid and durable as stone. Of this material were built the walls of Babylon, and the temple of Belus; the most ancient examples of this mode of construction which history records, and which were reckoned among the wonders of the world. We also learn that bitumen was used as cement in these buildings; which renders it possible that at this period the method of reducing calcarous stones into lime, to form mortar, was not known.

The buildings of the Greeks were at first of wood and clay; but they soon substituted stone and marble to the beams and posts which formed their original edifices; and these were so regular and beautiful, that they offered a model which art never lost sight of in the most sumptuous decorations.

The early English habitations, huts, or cottages, were constructed of rude materials, of such kinds as the country afforded; generally of earthy substances, blended with vegetable substances, of a very perishable nature, such as mud and straw. Indeed, these materials are in some remote parts used even at this time; and the buildings are denominated *mud* cottages in some districts, and *cab dab* in others.

It would occupy too much space to trace the progress of the art of building through all its stages in this country. That it is well understood now is obvious in the comfort and convenience displayed in houses of the most inconsiderable dimensions.

Ancient Rome consisted of 48,000 houses, all insulated or detached; but that number is comparatively trifling to the houses which comprise the immense district comprehended in the term London, though the boundary of the old city is very circumscribed. Notwithstanding its immense extent and population, it is undoubtedly the most healthy city in the world: this may be in some degree attributed to the cleanliness of its inhabitants, but principally to the very salutary provision made by parliament for regulating buildings, in an act passed in the early part of the reign of George III.; and to the very admirable plan of drainage by sewers, &c.

The English gentlemen have their country houses, which are the same as the *villa* of the ancient Romans; and what in Spain and Portugal they call *quinta;* in Provence, *cassine;* in some other parts of France, *closerie;* in Italy, *vigna.*

The citizens of Paris had their *maisons de bouteilles,* bottle-houses, to retire to and entertain their friends; and in England and Wales, it was usual for the nobility and gentry to build "summer-houses," or rather drinking-rooms, in their gardens, at a small distance from their mansions. "These," says Pennant, "were used as a retreat for the jolly owners and their friends to enjoy, remote from the fair, their toasts and noisy merriment."

LES NEUFS.

IX CROISADES or CRUSADES. Holy wars undertaken by the Christians against the infidels, particularly against the Turks, for the recovery of Palestine. These expeditions, it is said, were ordered by the council of Clermont. The soldiers wore consecrated crosses of various colours upon the right shoulder. The English wore them white; the French, red; the Flemish, green; the Germans, black; and the Italians, yellow.

In the spring of 1096, above 60,000 of the populace of both sexes, from the confines of France and Lorraine, assembled and put themselves under the conduct of Peter the Hermit, and followed him along the banks of the Rhine and Danube. The example and footsteps of Peter were followed by another fanatic, the Monk of Godescal, whose sermons had swept away many thousand peasants from the villages of Germany. Their rear was again pressed by a herd of 200,000 of the most stupid and savage refuse of the people, who mingled with their devotion a brutal license of rapine, drunkenness, &c. Some counts and gentlemen joined the motley multitude, with a view of sharing in the spoil. The first attacks of these enthusiasts were directed against the Jews, and many thousands of these unhappy people were pillaged and massacred. As the crusaders advanced to the wild and desolate countries, they endured incredible hardships, and 300,000 of them perished before a single city was rescued from the infidels.

None of the great sovereigns of Europe embarked their persons in the first crusade; but the religious ardour operated more strongly on the princes of the second order. The first rank both in war and council is justly due to Godfrey of Bouillon, a descendant of Charlemagne in the female line. He was accompanied by his two brothers, Eustace, the elder, and Baldwin, the younger; the duke of Lorraine, and the barons of France, Germany, and Lorraine, who assembled their vassals. Among the heads of the crusaders, we may also mention Hugh of Vermandois, Robert, duke of Normandy, the eldest son of William the Conqueror; Robert, count of Flanders, surnamed the sword and lance of the Christians; and Stephen, count of Chartres, Blois, and Troyes, one of the richest princes of the age, the number of whose castles was said to have amounted to 365. The difficulty of procuring subsistence for such a multitude of men and horses induced these several leaders to separate their forces; and they agreed to meet in the neighbourhood of Constantinople, the last of which arrived there on the 15th of August, 1096.

The principal force of the crusaders consisted in their cavalry; and when that force was mustered on the plains of Bithynia, the knights and their martial attendants on horseback amounted to 100,000 fighting men, completely armed with helmet and coat of mail. The whole number that formed the infantry and promiscuous crowd was composed of 600,000 pilgrims able to bear arms, and priests, monks, women, and children.

The efforts of these adventurers were irresistible, and after traversing and subduing the whole land from Nicomedia to Jerusalem, the siege of the holy city commenced on the 7th of June, 1099: Godfrey of Bouillon erected his standard on the first swell of Mount Calvary. The siege lasted forty days, and they were forty days of calamity and anguish. On Friday, at three o'clock in the afternoon, the day and hour, as it is said, of the passion, Godfrey of Bouillon stood victorious on the walls of Jerusalem, and rescued it from the Mahometan yoke. The victors, to their everlasting disgrace, indulged themselves three days in a promiscuous massacre; so that the infection of the dead bodies occasioned an epidemical disease; they put 70,000 Moslems to the sword, and burnt the harmless Jews in their synagogue.

The Holy Sepulchre was now free, and the bloody victors prepared to accomplish their vow. Bare-headed and bare-foot, with contrite hearts and in humble posture, they ascended the hill of Calvary, amidst the loud anthems of the clergy; kissed the stone which had covered the Saviour of the world, and bedewed with tears of joy and penitence the monument of their redemption.

Forty-eight years after the deliverance of the holy sepulchre, the emperor Conrad III., and the French king, Louis VII., undertook the second crusade in 1147, and returned in 1148, after a disastrous expedition.

The third crusade was undertaken in 1189, by Frederic I., surnamed Barbarossa, emperor of Germany, whose example was followed, the next year, by Philip Augustus, king of France, and Richard Cœur de Lion, king of England. These two monarchs arrived in Palestine in the year 1191, and succeeded in their first encounters with the infidels. After the reduction of Acre or Ptolemais, the French monarch returned to Europe, and the king of England, who remained, pushed the war with great vigour. Deserted, however, by the French and Italians, and influenced by other weighty reasons, he concluded, in 1192, a truce with Saladin, whom he had defeated in several engagements, for three years, three months, and three days, and soon evacuated Palestine with his whole army.

The fourth crusade was undertaken by the Teutonic Knights, an order ordained by Celestin III.

The fifth crusade, 1198, was excited by an illiterate priest of the neighbourhood of Paris, Fulk, of Neuilly, who deserted his parochial duty to assume the more flattering character of a popular and itinerant missionary. No sooner did Innocent III. ascend the chair of St. Peter, than he proclaimed to Italy, Germany, and France, the obligation of this new crusade. The pontiff described the ruin of Jerusalem, the triumph of the pagans, and the shame of Christendom; his liberality proposed the remission of sins, a plenary indulgence to all who should serve in Palestine, either a year in person, or two years by substitute.

The sixth crusade was undertaken 1217, under the pontificate of Honorius III. 200,000 Franks were landed at the eastern mouth of the Nile, and it was expected that Palestine might be subdued in Egypt, the seat and storehouse of the sultan. They were at first successful, but the result was disastrous.

The seventh crusade was undertaken by the emperor Frederic II., who set out about 1228, after having been excommunicated for his delays by the incensed pontiff Gregory IX. As soon as he landed in Palestine, he turned his thoughts towards peace, and concluded a treaty, or rather a truce of ten years, with Melic-Camel, sultan of Egypt. He stipulated that he should be put in possession of the city and kingdom of Jerusalem, which condition was immediately executed; and, entering the city with great pomp, he placed the crown upon his head with his own hands.

The eighth crusade was undertaken by Louis IX., king of France, in consequence of a vow which he made in the year 1248, on occasion of a dangerous illness. Famine and pestilence overwhelmed his army in 1250, and after remaining four years in Palestine, he returned to France with a small remnant of his forces.

The ninth and last crusade was renewed by the same valiant but unfortunate monarch. Pestilence again broke out, and carried off the greatest part of his army, and seized at last the sovereign himself, who fell a victim to its rage on the 25th August, 1270. Louis was the last of the European princes that embarked in the holy wars.

IX COLOURS of PLANTS. The colours of plants are divided by Linnæus into

Hyaline, with the transparency either of water or glass.

White, either cream-coloured or snowy.

Cinereous, either grey, livid, or lead colour.

Black, either dark or jet black.

Yellow, either sulphur, flame, or copper-coloured.

Red, either crimson, flesh-coloured, or scarlet.

Purple, more or less approaching to violet.

Blue.

Green.

IX MUSES, daughters of Jupiter. **Clio**, the Muse presiding over history: she is said to have invented the lute. **Calliope**, so called from the sweetness of her voice, the Muse of heroic poetry. **Erata**, the Muse of lyric poetry. **Thalia**, the Muse of comedy. **Melpomene**, the Muse of tragedy. **Terpsichore**, the Muse of dancing. **Euterpe**, the Muse of music, and inventress of the flute. **Polyhymnia**, the Muse of rhetoric; and, **Urania**, the Muse of astronomy.

IX. INFERIOR HEATHEN GODDESSES, The, are:

Flóra, the goddess of flowers.

Pomóna, the goddess of fruits.

Bellóna, the goddess of war.

Auróra, the goddess of morning or day-break.

Thémis, the sister of Saturn, was goddess of righteousness and justice: her daughter,

Astréa, also represents justice; she is sometimes called the Virgin.

Hygéia, the goddess of health.

Hébe, the goddess of youth, and cup-bearer to Jupiter.

Ate, the goddess of mischief. (For the superior goddesses, vide *Les Dix*).

IX PARTS of SPEECH in the English language; viz. nouns, adjectives, verbs, adverbs, prepositions, pronouns, conjunctions, articles, and interjections.

IX ORDERS of ANGELS. Ecclesiastical writers make an hierarchy of nine orders of angels. Others have distributed angels into nine orders, according to the names by which they are called in Scripture, and reduced these orders into three hierarchies; to the first of which belong *seraphim;* to the second, *dominions*, *virtues*, and *powers;* and to the third, *principalities*, *archangels*, and *angels*.

The Jews reckon four orders or companies of angels, each headed by an archangel; the first order being that of Michael; the second, of Gabriel; the third, of Uriel; and the fourth of Raphael.

IX ADDITIONS of HONOUR. When augmentations to coats of arms are granted, they are called additions of honour. The additions are nine in number; viz. a *border*, a *quarter*, a *canton*, a *gyron*, a *pile*, a *flasque*, a *flanche*, a *voider*, and an *escutcheon* of pretence. In the reign of Henry VIII. the pile had the preference; and was granted by that king as an augmentation of honour to the lady Jane Seymour, and also to the lady Catherine Parr.

It is now the practice, when an augmentation to the arms of a subject is granted, to place it either on a quarter or on a canton.

IX DISTINCTIONS of HOUSES in HERALDRY.
The first son, bears on his shield a label.
Second son, a crescent.
Third son, a mullet.
Fourth son, a martlet.
Fifth son, an annulet.
Sixth son, a fleur-de-lis.
Seventh son, a rose.
Eighth son, a cross-moline.
Ninth son, a double quatrefoil.

IX POINTS of the HERALDIC SHIELD. The heraldic shield is divided into nine component parts or points, named,

Dexter chief point.
Middle chief.
Sinister chief.

Honour point.
Fess point.
Nombril point.
Dexter base.
Middle base.
Sinister base.

The shield was that part of the ancient armour on which the persons of distinction in the field of battle always had their arms painted.

To the exercise of tournaments we owe the first emblazoning of coats of arms. In Germany, it was anciently a custom to hold a tournament every three years, to serve as proof of nobility: for the gentleman who had assisted at two was sufficiently blazoned and published; *i. e.* he was acknowledged noble, and bore two trumpets, by way of crest, on his tournament casque. Those who had not been in any tournaments had no arms, though they were gentlemen.

The first tournaments were only courses on horseback, in which the cavaliers tilted at each other with canes, in the manner of lances; and were distinguished from *justs*, which were courses or careers, accompanied with attacks and combats with blunted lances and swords.

It is difficult to fix the epocha of their institution, as many nations have laid claim to it. Nithard relates, that at the interview of Charles the bold, king of France, who succeeded to the throne in the year 840, and his brother Louis of Germany, at Strasburg, the gentlemen of the retinue of both princes fought on horseback, to display their courage and skill.

Instances of them occur among the English in the reign of King Stephen, about the year 1140; but they were not much in use till Richard's time, towards the year 1149. After which period, these diversions were performed with extraordinary magnificence, in the Tilt-yard, near St. James's, Smithfield, and other places. At last, however, they were found to be productive of bad effects, and the occasion of several fatal misfortunes; as in the instance of Henry II. of France, who died of a wound received at a tournament, and of the *tilt* exhibited at Chalons; which, from the numbers killed on both sides, was called the little war of Chalons. These, and other inconveniences resulting from these dangerous pastimes, gave the popes occasion to forbid them, and the princes of Europe gradually concurred in discouraging and suppressing them.

Pope Eugenius II. excommunicated those who went to tournaments, and forbade them burial in holy ground. One Chiaoux, who had assisted at a tournament under Charles VIII. said very wisely, "If it be in earnest, it is too little; if in jest, too much."

IX GREAT BATTLES connected with ENGLISH HISTORY.

1. **Bannockburn** in Scotland, between the English and the Scots, on the 25th June, 1314, in which the English were defeated with great loss; and by which the independence of Scotland was secured, and Bruce fixed on the throne of that kingdom.

2. **Cressy** (properly **Crecy**) in France, between Philippe de Valois, king of France, and Edward III. king of England, 1346.

The king of France hearing that Edward had made a stand at this place, and dreading nothing so much as the escape of the English, began the march of his great army from Abbeville early in the morning of the 26th of August, and continued it for several hours with great eagerness; but was advised not to engage, on account of the fatigue of his troops. His orders for halting were, however, not obeyed. Edward had employed the forenoon in drawing up his army in three lines. The first, which consisted of 800 men at arms, 4000 English archers, and 600 Welsh foot, was commanded by his heroic son, the Prince of Wales, assisted by the earls of Warwick and Oxford; the second line, composed of 800 men at arms, 4000 halberdiers, and 2400 archers, was led by the earls of Arundel and Northampton; the last line, or body of reserve, in which were 700 men at arms, 5300 billmen, and 6000 archers, was ranged along the summit of the hill, and conducted by the English king in person. When the army was completely formed, Edward rode along the lines, and by his words and looks inspired his troops with the strongest hopes of victory. He then commanded the cavalry to dismount, and the whole army to sit down upon the grass, in their ranks, and refresh themselves. As soon as the French army came in view, they sprang from the ground, ready to receive them.

The king of France, assisted by the kings of Bohemia and Majorca, the dukes of Lorraine and Savoy, and several other sovereign princes, with the flower of the French nobility, laboured to restore some degree of order to his large army, and drew it up also in three lines, but very indistinctly formed. The first line was commanded in chief by the king of Bohemia; the second, by the earl of Alençon, brother of the king of France; and the third by the king in person. Each of these lines contained a greater number of troops than the whole English army.

The battle was begun about 3 o'clock in the afternoon, by a body of Genoese cross-bowmen in the French service; who, letting their weapons fly at too great a distance, were presently routed by a shower of arrows from the English archers. The earl of Alençon, after trampling to death many of the flying Genoese, made a furious attack on the corps commanded by the Prince of Wales. The earls of Arundel and Northampton advanced with the second line to sustain the prince. The battle raged for some time with uncommon fury. Anxious for the safety of the prince, the earl of Warwick sent to entreat the king to advance with the third line. But Edward, who had taken his stand on the top of the hill, from whence he had a full view of both armies, asked the messenger whether his son was unhorsed, wounded, or killed? and he answered, that he was unhurt, and performed prodigies of valour. "Go, then," said the king, "and tell my son and his brave companions, that I will not deprive them of any part of the glory of their victory." This flattering message inspired the prince and his troops with redoubled ardour. The king of Bohemia, the earl of Alençon, and many other noblemen being slain, the whole first and second line of the French were put to flight. Undismayed at the slaughter of his troops, and the fall of so many princes, the French king advanced to the charge with the line immediately under his command; but it soon shared the same fate with the other two. Philippe, unhorsed and wounded, was carried off the field by John de Hainault. Of his mighty army, which at the commencement of the battle consisted of 120,000 men, only five knights, and about 60 soldiers, fled with him. Such was the celebrated victory of Crecy, the greatest ever gained by any king of England.

It was at the conclusion of this battle that the Prince of Wales, called Edward the Black Prince (so denominated from the colour of his armour), assumed the crest of ostrich feathers, and the motto "Ich dien" (I serve), belonging to the king of Bohemia, who fell in the battle, which all his successors have since borne. The title of duke of Cornwall was also conferred on this prince, and has been continued to his successors.

3. Poictiers, in France, between John king of France and Edward the Black Prince, September 19th, 1356. This battle was fatal to the French army and their king, who was taken prisoner. And here we shall rather speak of the noble conduct of Edward after his victory than the manner of his gaining it.

The monarch, when led to the victor's tent, was met by the prince with every expression of sympathy and respect. So great was the conduct of Edward in this instance, that he not only caused a noble repast to be prepared for the fallen king, but waited upon him in person; and in every instance treated him as a superior rather than a captive. "Here," says the historian, "commences the real and truly admirable heroism of Edward: for victories are vulgar things, in comparison of that moderation and humanity displayed by a young prince, only twenty-seven years of age, not yet cooled from the fury of battle, and elated by as extraordinary and unexpected success as had ever crowned the arms of any commander. He came forth to meet the captive king, with all the marks of regard and sympathy, and administered comfort to him amidst his misfortunes; paid him the tribute of praise due to his valour, and ascribed his own victory merely to the blind chance of war, or to a superior providence, which controls all the efforts of human force and prudence. All his father's pretensions to the crown of France were now buried in oblivion: John, in captivity, received the honours of a king, which were refused him when seated on the throne. His misfortunes, not his title, were respected; and the French prisoners, conquered by this elevation of mind more than by their late discomfiture, burst into tears of admiration, which were only checked by the reflection, that such genuine and unaltered heroism in an enemy must certainly, in the issue, prove more dangerous to their native country."

Edward conducted his prisoner to Bourdeaux, concluded a truce with France for two years, and then conducted the captive monarch to England. He landed at Southwark, and was met by a vast concourse of people of all ranks and stations. The king was clad in royal apparel, mounted on a white steed, distinguished as well for its beauty as for the richness of its furniture. The conqueror rode by his side in a meaner attire, and was carried by a black palfry. In this situation he passed through the streets of London, and presented the king of France to his father, who advanced to meet him, and received him with the same courtesy as if he had been a neighbouring potentate, that had voluntarily come to pay him a visit.

4. AGINCOURT, in the French Netherlands, where the English, commanded by Henry V., obtained a glorious victory over the French, October 25th, 1415. The army of Henry was reduced by sickness and various accidents to 10,000 men, and the French had collected a force consisting of 100,000 men, or as some say of 140,000 men, to intercept the march of the English from Harfleur towards Calais. The king had recourse to all the means in his power for encouraging the progress of his small army, amidst the difficulties and inconveniences of their route; and on the evening of October 24 they arrived at Agincourt, within sight of the French, and prepared for a battle, which it was impossible to avoid. Whilst the English soldiers were exhorting one another to fight bravely in the approaching action, the king, overhearing some of his nobles expressing a wish that the many brave men who were idle in England were present to assist them, exclaimed—"No! I would not have one man more. If we are defeated, we are too many; if it shall please God to give us the victory, as I trust he will, the smaller our number, the greater our glory." Henry, with the advantage of moon-light, reconnoitred the ground, and pitched upon a field of battle admirably adapted for preserving a small army from being sur-

rounded by a great one. It was a gentle declivity from the village of Agincourt, of sufficient extent for his small army, defended on each side by hedges, trees, and brushwood. Having determined upon the place of action, the king and his army betook themselves to rest, except those who, considering this as the last night of their lives, spent it in devotion.

The French, exulting in their numbers, confident of victory, and supplied with abundance of provisions, spent the night in riotous festivity, and in forming schemes for the disposal of their prisoners and booty. It was in general resolved to put all the English to the sword, except the king and the chief nobility, who were to be made prisoners for the sake of their ransom. On the next morning, the hostile armies were ranged in order of battle; each of them forming three lines, with bodies of cavalry on each wing. The constable D'Albert, who commanded the French army, lost the advantage of his superior number by drawing up his troops in a narrow plain, between two woods; and this was observed to be the chief cause of all the disasters that followed. The king of England employed various arts to supply his defect of numbers. His first line consisted wholly of archers, four in file, each of whom, besides his bow and arrows, had a battle-axe, a sword, and a stake pointed with iron at both ends, which he fixed before him in the ground, with the point inclining outwards, to protect him from the cavalry. This was a new invention, and had a happy effect. He dismissed all his prisoners on their word of honour to surrender themselves at Calais, if he gained the victory; and lodged all his baggage in the village of Agincourt, in his rear, under a slender guard. The first line was commanded by Edward duke of York; the second, by the king himself; the third, by the duke of Exeter, the king's uncle. When the lines were formed, the king in shining armour, with a crown of gold adorned with precious stones on his helmet, mounted on a fine white horse, rode along them, and addressed each corps with a cheerful countenance and animating speeches. To inflame their resentment against their enemies, he told them that the French had determined to cut off three fingers of the right hand of every prisoner; and to rouse their love of honour, he declared that every soldier who behaved well should, from that time, be deemed a gentleman, and entitled to bear coat-armour. The English, thus incited, stripped themselves almost naked, that they might deal their blows with the greater rapidity and vigour. The two armies, prepared for action, stood for a considerable time gazing at each other in solemn silence. At ten o'clock, however, Henry, fearing that the French would discover the danger of their situation, and decline a battle, commanded the charge to be sounded. Upon this the English kneeled down and kissed the ground, and then, rising suddenly, discharged a flight of arrows, which did great execution among the crowded ranks of the French. This onset was succeeded by the attack of a body of archers, who had been placed in ambush, and who discharged their arrows on the flank of the French line, and threw it into disorder. The battle now became general, and raged with uncommon fury. When the English archers had expended all their arrows, they threw away their bows, and rushing forward, made dreadful havoc with their swords and battle-axes. The first line of the enemy were thus defeated, and their leaders either killed or taken prisoners. The second line, commanded by the duke d'Alençon, who had vowed either to kill the king or take him prisoner, or perish in the attempt, advanced to the charge, and was encountered by the second line of the English, commanded by the king. The conflict was very furious. The duke d'Alençon forced his way to the king, and assaulted him with great violence; but the king brought him to the ground, and he was instantly despatched. Discouraged by this disaster, the second line made no farther resistance, and the third fled without striking a blow; and thus the English, after a violent struggle of three hours, obtained a complete and signal victory. Although the king did not permit his men to follow the fugitives to a great distance, the number of his captives exceeded the number of his soldiers; and many of these prisoners were persons of rank and fortune, who, encumbered with their heavy armour, could not make their escape. The French left dead on the field of battle the constable d'Albert, three dukes, the archbishop of Sens, one marshal, 13 earls, 92 barons, 1500 knights, and a far greater number of gentlemen, besides several thousands of common soldiers. The

French historians acknowledge that the loss of the English was inconsiderable; and those of our own contemporary writers who make it the greatest, affirm that it did not exceed 100; and that the duke of York and the earl of Suffolk were the only great men who fell on that side in this memorable action.

5. **Bosworth.** This battle, on which the kingdom of England depended, and which terminated the civil war between the houses of York and Lancaster, was fought August 22d, 1485, on a flat plain, called Radmore Plain, three miles from Bosworth, and four miles from Hinckley, between Henry, earl of Richmond, at the head of 6000 men, and king Richard III. with an army above double that number. About 100 of the former were slain, and about 4000 of the latter. The battle, which lasted little more than two hours, was decided by the death of Richard, as his followers then sought safety in flight, and left Richmond master of the field and kingdom. Richard fought with singular intrepidity. His body being found among the slain, was ignominiously thrown across a horse, and carried to Leicester, where it was interred in the Grey Friars' church. Many relics of this battle have at various times been found by digging and ploughing in the field. These were spurs, rings, armour, cross-bows, arrow-heads, &c. King Richard's well, and Crown-hill, where Richmond harangued his army, preserve the identity of the place.

6. **Flodden Field.** This battle between the English and Scots was fought on the 9th Sept. 1513.

The English divided their army into two lines. Lord Howard led the main body of the first line, Sir Edmond Howard the right wing, Sir Marmaduke Constable the left; the earl of Surrey himself commanding the main body of the second line, lord Dacres the right wing, Sir Edward Stanley the left. The front of the Scots presented three divisions to the enemy: the middle was led by the king himself; the right by the earl of Huntley, assisted by lord Hume; the left by the earls of Lenox and Argyle. A fourth division, under the earl of Bothwel, made a body of reserve. Huntley began the battle; and after a sharp conflict, put to flight the left wing of the English, and chased them off the field: but, on returning from the pursuit, he found the whole Scottish army in great disorder. The division under Lenox and Argyle, elated with the success of the other wing, had broken their ranks, and, notwithstanding the remonstrances and entreaties of La Motte, the French ambassador, had rushed headlong upon the enemy. Not only Sir Edmond Howard, at the bead of his division, received them with great valour; but Dacres, who commanded in the second line, wheeling about during the action, fell upon their rear, and put them to the sword without resistance. The division under James, and that under Bothwel, animated by the valour of their leaders, still made head against the English, and throwing themselves into a circle, protracted the action till night separated the combatants. The victory seemed yet undecided, and the numbers that fell on each side seemed nearly equal, amounting to above 5,000 men: but the morning discovered where the advantage lay. The English had lost only persons of small note; but the flower of the Scottish nobility had fallen in battle, and their king himself, after the most diligent inquiry, could nowhere be found. In searching the field, the English met with a dead body which resembled him, and was arrayed in a similar habit, and they put it in a leaden coffin, and sent it to London. During some time it was kept unburied, because James died under sentence of excommunication, on account of his confederacy with France, and his opposition to the holy see; but upon Henry's application, who pretended that this prince had, in the instant before his death, discovered signs of repentance, absolution was given him, and his body was interred. The Scots, however, still asserted, that it was not James's body which was found on the field of battle, but that of one Elphinston, who had been arrayed in arms resembling their king's, in order to divide the attention of the English, and share the danger with his master. It was believed that James had been seen crossing the Tweed at Kelso; and some imagined, that he had been killed by the vassals of lord Hume, whom that nobleman had instigated to commit so enormous a crime. But the populace entertained the opinion that he was still alive, and, having secretly gone in pilgrimage to the Holy Land, would soon return, and take possession of the throne. This fond conceit was long entertained among the Scots.

7. **Worcester.** In 1651, the second battle of Worcester was fought under Charles II., a battle which decided the destructive and vindictive controversy between the royalists and the parliamentary party, by which the latter obtained a complete ascendancy. With an army of 30,000 men, Cromwell fell upon Worcester (which was the first city that declared for the crown, and the last that held out in its defence); and attacking it on all sides, and meeting with little resistance, except from duke Hamilton and general Middleton, broke in upon the disordered royalists. The streets of the city were strewed with dead. Hamilton, a nobleman of bravery and honour, was mortally wounded; Massey wounded and taken prisoner. The king himself, having given many proofs of personal valour, was obliged to fly. The whole Scottish army was either killed or taken prisoners. The country-people, inflamed with national antipathy, put to death the few that escaped from the field of battle.

The king left Worcester at six o'clock in the afternoon, and, without halting, travelled about twenty-six miles, in company with fifty or sixty of his friends. To provide for his safety, he thought it best for him to separate himself from his companions; and he left them without communicating his intentions to any of them. By the earl of Derby's directions, he went to Boscobel, a lone house on the borders of Staffordshire, inhabited by one Penderell, a farmer. To this man Charles entrusted himself. The man had dignity of sentiments much above his condition; and though death was denounced against all who concealed the king, and a great reward promised to any one who should betray him, he professed and maintained unshaken fidelity. He took the assistance of his four brothers, equally honourable with himself; and having clothed the king in a garb like their own, they led him into the neighbouring wood, put a bill into his hand, and pretended to employ themselves in cutting faggots. Some nights he lay upon straw in the house, and fed on such homely fare as it afforded. For a better concealment, he mounted upon an oak, where he sheltered himself among the leaves and branches for twenty-four hours. He saw several soldiers pass by. All of them were intent in search of the king; and some expressed in his hearing their earnest wishes of seizing him. This tree was afterwards denominated the *Royal Oak*, and for many years was regarded by the neighbourhood with great veneration.

Charles was in the middle of the kingdom, and could neither stay in his retreat nor stir a step from it, without the most imminent danger. Fear, hopes, and party-zeal interested multitudes to discover him: and even the smallest indiscretion of his friends might prove fatal. Having joined lord Wilmot, who was skulking in the neighbourhood, they agreed to put themselves into the hands of colonel Lane, a zealous royalist, who lived at Bentley, not many miles distant. The king's feet were so hurt by walking about in heavy boots, or countrymen's shoes which did not fit him, that he was obliged to mount on horseback, and he travelled in this situation to Bentley, attended by the Penderells, who had been so faithful to him. Lane formed a scheme for his journey to Bristol, where it was hoped he would find a ship in which he might transport himself. He had a near kinswoman, Mrs. Norton, who lived within three miles of that city. He obtained a pass (for during those times of confusion this precaution was requisite) for his sister, Jane Lane, and a servant, to travel towards Bristol, under pretence of visiting her relation. The king rode before the lady, and personated the servant.

When they arrived at Norton's, Mrs. Lane pretended that she had brought along, as her servant, a poor lad, a neighbouring farmer's son, who was ill of an ague; and she begged a private room for him, where he might be quiet. Though Charles kept himself retired in this chamber, the butler, one Pope, soon knew him. The king was alarmed, but made the butler promise that he would keep the secret from every mortal, even from his master; and he was faithful to his engagement.

No ship, it was found, would for a month set sail from Bristol, either for France or Spain; and the king was obliged to go elsewhere for a passage. He entrusted himself to colonel Windham of Dorsetshire, an affectionate partisan of the royal family.

Windham, before he received the king, asked leave to entrust the important secret to his mother, wife, and four servants, on whose fidelity he could rely. Of all these, no one proved wanting in honour or discretion.

The king continued several days in Windham's house; and all his friends in Britain and in every part of Europe remained in the most anxious suspense with regard to his fortunes. No one could conjecture whether he were dead or alive; and the report of his death being generally believed, happily relaxed the vigilant search of his enemies. Trials were made to procure a vessel for his escape; but he still met with disappointments. Having left Windham's house, he was obliged again to return to it. He passed through many other adventures, assumed different disguises, in every step was exposed to imminent perils, and received daily instances of uncorrupted fidelity and attachment. The sagacity of a smith, who remarked that his horse's shoes had been made in the north, not in the west, as he pretended, once detected him, and he narrowly escaped. At Shoreham, in Sussex, a vessel was at last found, in which he embarked. He had been known to so many, that if he had not set sail in that critical moment, it had been impossible for him to escape. After one-and-forty days' concealment, he arrived safely at Fescamp in Normandy. No less than forty men and women had, at different times, been privy to his concealment and escape.

8. Boyne. The battle of the Boyne was fought between William III. and that infatuated prince James II. on the 1st July, 1690. The place where the battle was fought was between Drogheda and Slaine, and is marked out by an obelisk, founded on a rock which rises boldly from the river. The advantage of situation was in favour of James's army; and if he had not himself fled before the battle was decided, the event might have been very different. The brave duke of Schomberg lost his life on this occasion, and William was often in great danger. The victory, however, was complete and decisive.

9. Culloden. This celebrated victory, obtained by the duke of Cumberland over Charles Stuart, the *Pretender*, which completely terminated the hopes of that family and its friends, was achieved in April, 1746. In less than half an hour after the commencement of the action the rebels were totally routed. The French piquets, after covering the retreat of the Highlanders,

retired to Inverness, and surrendered themselves prisoners of war. An entire body of the rebels marched off the field in order, with their pipes playing, and the Pretender's standard displayed; the rest were defeated with great slaughter, and the field was covered with the dead and wounded. The road, as far as Inverness, was strewed with the bodies of the slain. Twelve hundred, or, as some say, three thousand rebels were slain and wounded in the field and in the pursuit. The earl of Kilmarnock was taken, and in a few days lord Balmerino surrendered, and was conveyed, with other leaders of the rebellion, by sea to London, there to await their fate. The glory of this victory, in which the duke of Cumberland acquired great honour, by his skill and valour as a commander, was unhappily sullied by the barbarity of the soldiers, who thirsted for revenge. It is said that they traversed the field of battle, and massacred those miserable wretches who lay maimed and expiring. The vanquished adventurer rode off the field, accompanied by a few horsemen; and having conferred with the old lord Lovat, dismissed his followers, and wandered about, a wretched and solitary fugitive, among the isles and mountains, for about four months, enduring such a variety of hardships and sufferings as no other person ever survived. In less than an hour his hope wholly vanished, and the rebellion was completely extinguished. When the news of this battle arrived in England, the nation was transported with joy, and extolled the duke of Cumberland as a hero and deliverer. Both houses of parliament congratulated his majesty on the auspicious event. They decreed, in the most solemn manner, their public thanks to his royal highness, which were transmitted to him by the respective speakers; and the commons, by bill, added 25,000*l.* per annum to his former revenue.

The battle of Hastings, which was more important to England in its result than any other, is given in the account of the CINQUE PORTS.

It is the well-founded remark of a judicious and elegant writer, that our European battles appear only as skirmishes, when compared with those which have deluged the plains of Asia with blood. In the year 1218, fatally distinguished as being the epocha of the first irruption of the Moguls and Tartars into the southern provinces of

Asia, the destroyer Ghengis-Khan marched to the siege of Otrar at the head of 700,000 combatants. Mohammed, the reigning sultan of Karazm, opposed him with an army 400,000 strong. The weaker party were defeated, and the Tartar conqueror commenced his sanguinary career by the destruction of 150,000 of his enemies. This first chastisement only paved the way for others more terrible. In following the great Khan through the dreadful scenes transcribed by De la Croix from the best eastern authorities, we are shocked at the unheard-of severities exercised upon such cities as most incurred his anger by an obstinate resistance. The particulars of such tragedies would but disgust the reader. To select a few of the most remarkable instances:—At the storming of Karazm, Mohammed's capital, 200,000 persons were massacred, and half that number sold for slaves; 90,000 were shot to death with arrows, in cold blood, on the plains of Nesa; 1,747,000 were butchered in the cities of Nishabûr and Tûs, and their dependencies; 1,600,000 in the district of Herat; and in the last battle fought by Ghengis-Khan against the rebels of Tangut, 300,000 are reported to have perished. The Chinese records inform us, that in the first fourteen years of the Mogul empire, the numbers of persons destroyed by Ghengis-Khan amounted to the dreadful total of eighteen millions and upwards.

The subsequent wars of the Moguls abound with examples of almost equal enormity. In the siege of the capital of the Chinese empire, by Oktay Khan, a million of people were slain on both sides. Timur Bek, who carried on his expeditions upon the same plan as Ghengis, could bring 800,000 men at once into the field, with whom he so completely defeated, at Ancyra, 400,000 Turks, under Bajazet, that not a fortieth part escaped the common destruction. In a word, it is in Asia that war has always been waged on the most gigantic scale.

IX ECCLESIASTICS most celebrated in ENGLISH HISTORY.

1. The venerable Bede, a learned monk of the eighth century, and one of the best writers of his time, was born in the neighbourhood of Wearmouth, in the bishopric of Durham, in 673. At seven years of age he

was brought to the monastery of St. Peter, founded near the place of his nativity about two years after his birth, where he was instructed under the care of Abbot Benedict, Ceolpid, and John of Beverly. Endowed with an excellent genius, and distinguished by assiduous application, his progress in various branches of learning was such, that at the age of nineteen he was ordained a deacon by the last-mentioned preceptor, the bishop of Hexham, and afterwards archbishop of York; and at thirty, he was ordained priest, by the same prelate. Although he lived in retirement, the fame of his learning and character soon spread over Europe, and pope Sergius addressed a letter to Ceolpid, urging him to send Bede to Rome. The death of the pope soon after this letter was written prevented Bede leaving his own country; nor, indeed, does it appear that he ever quitted Northumberland, though some assert that he visited the university founded at Grantchester or Cambridge, and this fact they allege as proof of the antiquity of this university. It appears from his numerous works on a variety of subjects, that his knowledge comprehended every kind of literature and science that was known at the period in which he lived; and from other collateral evidence of unquestionable authority, that he was justly entitled to the appellations of "the wise Saxon," and of "Venerable Bede," conferred on him by his contemporaries, and uniformly retained by posterity. Among other works, he wrote a history of Christianity from its first introduction into Britain, which is regarded as the most comprehensive and authentic account of its early stages in this country. His last literary work was a translation of the Gospel of St. John into the Saxon language, which he completed with difficulty on the day and hour of his death, which happened on the 26th May, A.D. 735. From his never having accepted any preferment above the humble rank of an unbeneficed priest, we may infer his singular moderation: his letter addressed to his intimate friend, the learned Egbert, archbishop of York, and containing excellent advice, the result of long experience, evinces the purity of his morals, and the liberality of his sentiments; and as he was never canonised as a saint, and the legends of the time record no miracle performed by him, we may reasonably conclude, that enthusiasm and the spirit of his order formed no part of his character.

It is from the ecclesiastical history of this learned monk that we know any thing concerning music in our country during the seventh and eighth centuries, the most barbarous period of its annals. In his account of the conversion of the Saxons to Christianity, he speaks of the litanies and hallelujahs being sung in the Gregorian manner, according to the Roman ritual.

2. **Thomas-a-Becket.** This prelate is famous as the cause of much political contention when living, and the object of much superstitious veneration after his death. He was born in London, in 1119, and studied at Oxford, Paris, Bologna, and Auxerre. He was patronised by Theobald, archbishop of Canterbury, who, on the accession of Henry II. to the throne in 1158, recommended Becket to his notice. The young king, caught with his pleasing countenance and lively wit, appointed him chancellor of England, and "conferred upon him a scandalous number of ecclesiastical benefices." He had also the temporalities of vacant prelacies, and the escheats of great baronies belonging to the crown, besides the custody of royal castles and forts. These revenues he expended without account or control; and Henry reposed such a degree of confidence in him, that he seemed almost to share the throne with the sovereign. At the time of the death of archbishop Theobald, the king was in Normandy; but as soon as he heard of it, he resolved to raise his chancellor to the primacy, in hopes, by his means, of governing the church in tranquillity. This advancement was retarded for a year by the opposition of the empress Maud, the king's mother, and of the bishops and clergy of England. But Henry's resolution was fixed, and his fondness for his favourite overcame all remonstrance; and Becket, being first ordained priest, was consecrated at Canterbury, June 6, 1162. As soon as Becket found himself firmly seated in the archiepiscopal chair, he suddenly changed his mode of life; and from being the gayest and most luxurious courtier, he became the most austere and solemn monk. Before the king's return to England in 1163, he had received so many complaints of the new primate, that he became sensible, when it was

too late, that he had made a wrong choice. In 1163, Becket attended a council summoned at Tours by pope Alexander III., where it is probable he was animated by the pope in his design of becoming the champion of the liberties of the church, and the immunities of the clergy. It is however certain, that soon after his return he began openly to prosecute his design, and the zeal he manifested caused a breach between him and his sovereign. Henry was determined to make the clergy as well as laity obey his laws, or answer for their disobedience in his courts of justice. Becket, on the other hand, maintained that the clergy were subject only to the laws of the church, and were to be judged only in spiritual courts, and punished only by ecclesiastical censures. In order to bring the question to a speedy issue, which the licentiousness of the clergy, and the atrocious crimes committed by some of them at this time, rendered absolutely necessary, a council of the clergy and nobility was summoned at Westminster; and at this council the king required that the archbishop and other bishops would consent to deliver to his officers a clerk who was degraded for any crime, in order to his being punished according to the laws of the land. The request was resisted by the primate's influence, and the council broke up in confusion. Although Becket had solemnly sworn to obey the laws and customs commonly called the "Constitutions of Clarendon," he soon began to exhibit signs of repentance, by extraordinary acts of mortification, and by discontinuing the performance of the sacred offices of his function; and he obtained from the pope, a bull releasing him from the obligation of his oath, and enjoining him to resume the duties of his sacred office. Fearing the king's indignation, he determined to retire quietly out of the kingdom; but was prevented from making his escape by contrary winds, and returned to wait upon the king, to supplicate forgiveness for attempting to leave the country without his permission. The king received him without any other expression of displeasure besides asking him "if he left England because he thought it too little to contain them both?" The interview was succeeded by fresh aggressions on the part of Becket, and he ultimately made his escape out of England, and took refuge in France. Upon his retreat, the king confiscated the revenues of the archbishopric, and sent ambassadors to the king of France and the earl of Flanders, dissuading these princes from affording Becket shelter in their dominions. The ambassadors met with a cold reception, and the king of France and the pope declared their intention of protecting him. When the ambassadors returned, Henry was highly incensed with the pope; and in token of his resentment, prohibited the payment of Peter-pence, and commanded all clerks who presumed to appeal to the pope to be imprisoned. He also commanded all the goods and revenues of the archbishop, and of all the clergy who adhered to him, to be seized, and proceeded to confiscate the estates and to banish the persons of all the primate's friends, retainers, and relations, to the number of about 400. During his residence abroad, Becket employed himself in writing expostulatory letters to the king and bishops of England, in issuing excommunications against several officers of the crown, and in threatening to excommunicate even the king himself. Notwithstanding a spirited remonstrance addressed to Becket by the English prelates, he persisted in his purpose; and communicated it to the pope in a letter which represented Henry as a cruel, impious, unrelenting persecutor, who had tried and condemned Christ in his person. Although Becket was prevented by the interposition of the king of France from excommunicating Henry, he excommunicated his ministers and chief confidants, and declared the Constitutions of Clarendon null and void; absolved all the bishops of England from the unlawful oath they had taken to obey them, and excommunicated all persons who paid any regard to them. The pertinacity of Becket rendered ineffectual for a long time all the efforts of the English prelates, the pope, and the king of France, for terminating the contention between him and the king of England. At length a reconciliation was effected, and Becket returned to Canterbury, accompanied by a multitude of people; and entered the city in a kind of triumph, amidst the acclamations of his attendants. Soon after his arrival, application was made to him for absolving the bishops whom he had suspended and excommunicated; and the king, who concurred in the application, and who had issued an order for this purpose, was greatly incensed at his refusal, more especially as the censures which he had inflicted on those prelates who assisted at the coronation seemed to call in question its validity. The pride of Becket was mortified by a message he received from the king, forbidding him to enter any royal town or castle, and commanding him to confine himself to the precincts of his church. Finding himself deserted by many of his friends, and receiving reports of the insults his followers met with, he began to indulge gloomy apprehensions, and declared, "that he was convinced the quarrel would not end without blood, and that he was determined to die for the church." When the excommunicated prelates implored the protection of the king, from the disgrace and ruin with which they were threatened by the primate, the indignation of Henry was roused, and in a moment of intemperate passion he exclaimed, "Shall this fellow, who came to court on a lame horse, with all his estate in a wallet behind him, trample upon his king, the royal family, and the whole kingdom? Will none of those lazy cowardly knights whom I maintain deliver me from this turbulent priest?" This passionate exclamation made too deep an impression on those who heard it; and particularly on four barons, who formed a resolution either to terrify the archbishop into submission, or put him to death. Accordingly, having concerted a plan, they set out for Canterbury by different routes, and arrived at a castle about six miles from the city on the 28th December, A.D. 1170; and on the following day proceeded to the city, and getting admission into the archbishop's apartments, they told him they were sent by the king, with a command that he should absolve the prelates and others whom he had excommunicated, and then go to Winchester, and make satisfaction to the king, whom he had endeavoured to dethrone. Becket, after a violent altercation, in which hints were thrown out that his life would be in danger if he did not comply, persisted in his refusal. Upon the departure of the barons, one of them charged his servants not to let him flee; to which Becket, who overheard them, exclaimed, "Flee! I will never flee from any man living. I am not come to flee, but to defy the rage of impious assassins." The barons with their accomplices, finding their threats ineffectual, put on their coats of mail, and taking each a sword in his right hand, and an axe in his left, returned to the palace, but found the gate shut. When they were preparing to break it open, Robert de Broc conducted them up a back staircase, and let them in through a window. A cry then arose, "They are armed! they are armed!" on which the clergy hurried the archbishop almost by force into the church, hoping that the sacredness of the place would protect him from violence. They would also have shut the door; but he exclaimed, "Begone, ye cowards! I charge you, on your obedience, not to shut the door. What! make a castle of a church!" The conspirators having searched the palace, came to the church, and one of them exclaiming, "Where is the traitor? where is the archbishop?" Becket advanced boldly, and said, "Here I am—an archbishop, but no traitor! I am ready to suffer in the name of him who redeemed me with his blood. God forbid that I should fly for fear of your swords, or recede from justice." They once more commanded him to take off the excommunication and suspension of the bishops. He replied, "No satisfaction has been yet made, nor will I absolve them." "Then," said they, "thou shalt instantly die, according to thy desert." "I am ready to die," replied Becket, "that the church may obtain liberty and peace in my blood. But in the name of God I forbid you to hurt any of my people." They now rushed upon him, and endeavoured to drag him out of the church, with an intention, as they afterwards declared, to carry him in bonds to the king, or, if they could not do that, to kill him in a less sacred place. But as he clung fast to one of the pillars of the choir, they could not free him from thence. During the struggle, he shook William de Tracy so roughly, that he almost threw him down; and as Reginald Fitzurse pressed harder upon him than any of the others, he thrust him away, and applied to him an opprobrious epithet. This language increased the rage of that violent man; he lifted up his sword against the head of Becket, who, bowing his neck, and joining his hands together in a posture of prayer, recommended his own soul and the cause of the church to God, and the saints of that cathedral. But Edward Grime, one of the monks of Canterbury, interposed his arm to ward off the blow: it was almost cut off, and the archbishop wounded in the crown of his head. He stood a second stroke, which likewise fell on his head, in the same devout posture, without a motion, a word, or a groan; but after receiving a third, he fell prostrate on his face; and all the accomplices pressing now to a share in the murder, a piece of his skull was struck off by one of them; upon which another scooped out the brains of the dead archbishop with the point of a sword, and scattered them over the pavement of the church.

Thus was assassinated, in the fifty-third year of his age, and ninth of his pontificate, A.D. 1170, December 29, Thomas-à-Becket. The respect paid to the memory of Becket after his death was extravagant beyond all bounds; and remains on record, as an evidence of the superstition and credulity which prevailed at the period in which it occurred. The king of England, to whose commands it was generally imputed, was represented as "That horrible persecutor of God, who exceeded Nero in cruelty, Julian in perfidy, and Judas in treachery;" and the pope was loudly called upon, by the kings of France, and many prelates, to draw the sword of St. Peter, and to inflict some exquisite punishment upon him. But none expressed greater grief and horror at this deed than Henry himself, who broke out into the loudest lamentations, refused to see any company, or admit of any consolation for three days. He also despatched an embassy to Rome, to vindicate himself from the imputation of having been the cause of it. All divine offices were suspended for nearly a year in the church where it had happened; and the church itself was, by order of the pope, re-consecrated. In 1173, Becket was canonised by a bull of Pope Alexander; and a particular collect was appointed to be used in all the churches of the province of Canterbury, for expiating the guilt of his murder. In the following year, King Henry, on his return to England, went to Canterbury, where he did penance, and underwent a voluntary discipline, walking bare-foot to his tomb, prostrating himself before it, and submitting himself to be scourged by the monks, passing all the day and night without any refreshment, kneeling on the bare stones, and bestowing great benefactions on the church of Canterbury, as a testimony of his regret for the murder. His virtues were the subjects of endless panegyrics, and the miracles operated by his relics were more numerous, more nonsensical, and more impudently attested, says Hume, than those which ever filled the legend of any confessor or martyr. Gervase of Canterbury informs us, that two large volumes of them were preserved in that church. In 1221, his body was taken up, in the presence of Henry III., and a vast concourse of the nobility and others, and deposited in a rich shrine, erected at the expense of archbishop Stephen Langton. This shrine was enriched with presents from all parts of Christendom; pilgrimages were performed to it, for obtaining the martyred prelate's intercession with heaven; and it has been computed that, in one year, above 100,000 pilgrims arrived in Canterbury for the purpose of paying their devotions at this tomb. "It is, indeed," says Hume, "a mortifying reflection, to those who are actuated by the love of fame, so justly denominated the last infirmity of noble minds, that the wisest legislator and most exalted genius that ever reformed or enlightened the world can never expect such tributes of praise as are lavished on the memory of a pretended saint, whose whole conduct was, probably to the last degree, odious or contemptible, and whose industry was entirely devoted to the pursuit of objects pernicious to mankind."

3. Roger Bacon was a monk of the Franciscan order: he was born at Ilchester in Somersetshire, in the year 1214. Having spent some years at Oxford, in the study of the languages, logic, mathematics, and various branches of philosophy, he removed, according to the custom of that age, to Paris, where he was distinguished both by his assiduity and improvement, and where, in token of his acknowledged eminence in literature and science, he received the degree of doctor in theology. While he was in France, or soon after his return to England, in the year 1240, he took the monastic habit, in the order of St. Francis; and, with a view of pursuing his studies and researches with greater advantage, he settled at Oxford. Such was the esteem in which he was generally held, and so high were the expectations which his contemporaries entertained of the benefits that would result to science from the vigour of his mind, and the assiduity of his application, that he was enabled by generous contributions to collect books, to construct instruments, during a course of twenty years, at an expense of 2000*l.*; which, con-

sidering the time in which he lived, was a very large sum. His growing fame excited envy; and the monks of his own order industriously circulated a report that he held converse with evil spirits, and practised magical arts. The efforts of malevolence, whatever might have been the real or pretended causes from which they originated, could not deprive this great man of the esteem and respect to which his distinguished talents and character entitled him. Such was the high opinion entertained by the cardinal bishop of Sabina, who was the pope's legate in England, of his genius and merit, that he requested from him a complete copy of all his works. As he was restrained, by the prohibition of his own fraternity, from communicating any of his works to any person whatever, he at first declined complying with the cardinal's request; but as soon as he heard that the cardinal legate was raised to the pontifical dignity, under the name of Clement IV., he signified to him, by letter, that he was ready to perform what his holiness had desired; and the pope assured him of protection against any interference of his own order. Bacon immediately began to collect, arrange, and improve the pieces he had already written, and having digested them into one volume, under the title of "Opus Majus" (the greater work), he sent it to the pope in the year 1267, by a special messenger, whose name was John of Paris, and who was his own favourite disciple. This John of Paris was a poor boy of promising talents, taken by Bacon under his tuition, in order to try, by experience, the efficacy of his peculiar mode of instruction; and, as the result of it, he observes, "That there was no room to conceive any high notions of the perfection of human wisdom, when it was possible, in a year's time, to teach a young man all that, with the utmost industry and application, a zealous inquirer after knowledge was able either to acquire or to discover in the space of twenty or even forty years."

He is said to have died in tranquillity, in the college of his order, and to have been interred in their church. Tradition reports, that, in order to prevent the uneasiness occasioned by his enemies, in the earlier period of his life, and while he was prosecuting his studies and performing his experiments, at Brazen-nose hall, at Oxford, he was obliged to retire from the university into a solitary place, called to this day "Friar Bacon's Study."

4. JOHN WICLIFF was the earliest reformer of religion from popery. He was born in the year 1324, in Yorkshire, near the river Tees, in a parish whence he takes his name. He was educated at Oxford, first as a commoner of Queen's College, and then at Merton College, peculiarly celebrated at that time for its learned members.

So early as the year 1356, he remonstrated against some popish corruptions; and in the year 1360, he was active in opposing the encroachments of the mendicant friars, who interfered with the jurisdiction and statutes of the university, and took all opportunities of enticing the students from the colleges into their convents. In the following year, he was appointed master of Baliol College, and presented to a living in Lincolnshire. In 1372, he took the degree of a doctor of divinity, and read lectures that gained him such applause, that whatever he said was regarded as an oracle. The impostures of the monks were the objects to which his first attacks were directed, and the circumstances of the times favoured his designs. The court of Rome was now enforcing by menaces its demands upon king Edward III. of the homage and tribute to the see of Rome which had been ingloriously stipulated by king John, and the parliament had determined to support the king in his refusal. A monk appeared as an advocate on behalf of the claims of Rome, and Wicliff's reply caused him to be favourably regarded at court, and gained him the patronage of the king's son, John of Gaunt, duke of Lancaster. In 1374, Wicliff was joined in an embassy to Bruges, the object of which was to confer with the papal nuncios concerning the liberties of the English church, on which the usurpation of Rome had made unwarrantable encroachments. By his foreign mission he had an opportunity of acquainting himself with the corruption and tyranny of the court of Rome; and both his lectures and conversations were amplified with invectives against the pope. Whilst he defended the authority of the crown and the privileges of the nobles against all ecclesiastical encroachments, he censured vice and corruption in all ranks of society. This conduct, though it raised his reputation among the people, excited a host of enemies, who selected from his writings nineteen articles, which they deemed heretical, and which as such they transmitted to Gregory XI. In 1377, this pontiff returned three bulls, addressed to the archbishop of Canterbury and the bishop of London, ordering the seizure and imprisonment of Wicliff; or, if this measure failed, his citation to the court of Rome; and also a requisition to the king and government, to assist in extirpating the errors he had propagated. Edward died before the bulls arrived; and the duke of Lancaster, uncle to the young king, had great influence in the administration. When Wicliff was cited, therefore, to appear at St. Paul's, before the two prelates, possessing plenitude of power, he thought it necessary to secure himself by the protection of that powerful patron. On the appointed day, he appeared at St. Paul's church in the midst of a vast concourse of people, and accompanied by the duke of Lancaster and lord Henry Percy, earl marshal. The bishop of London was very indignant, and angry words passed between him and the two lords; so that the whole assembly was tumultuous, and nothing was done. Wicliff afterwards appeared before the two prelates at Lambeth palace, and delivered an explanation of the articles objected against him. The Londoners, who were apprehensive that he might be severely treated, flocked in crowds to the palace; and a messenger from the queen forbade the delegates to proceed to a definitive sentence. Gregory soon after died, and his commission expiring with him, Wicliff escaped, but not without a severe illness, which was the consequence of his anxiety and fatigue. His spirits, however, were unbroken, and he was firm in maintaining opinions which the friars, by all the efforts of intimidation, urged him to renounce. The last step in their proceedings against him was a royal letter, procured by the archbishop, addressed to the chancellor and proctors, and directing them to expel from the university and town of Oxford all who should harbour Wicliff or his followers, or hold any communication with them. These proceedings obliged him to withdraw, and to retire to his rectory at Lutterworth, where he continued to preach reformation in religion, and finished his translation of the Scriptures. Some have said, that king Richard banished him out of England; but if that were the case, it was only a temporary exile, and he returned in safety to Lutterworth. In 1383, he had a paralytic seizure, which furnished him with an excuse for not appearing to a citation of pope Urban VI.; and this was succeeded by a second attack, which terminated his life, on the last day of December, 1384. His remains, however, did not escape the vengeance of his enemies many years after his death; for the council of Constance, in 1415, not content with condemning many propositions in his works, and declaring that he died an obstinate heretic, with impotent malignity, ordered his bones to be dug up, and thrown upon a dunghill. This sentence was executed in 1428, in consequence of a mandate from the pope, by Flemming, bishop of Lincoln, who caused his remains to be disinterred and burnt, and the ashes to be thrown into a brook.

His doctrine not only survived these impotent attempts to extinguish it, but was perpetuated and diffused by his followers, who were called Lollards; and "this germ of reformation," says one of his biographers, "broke forth into complete expansion, when the season for that great change was fully come."

5. **Cardinal Beaufort**, son of John of Gaunt. Having been educated at Oxford and Aix-la-Chapelle, he was advanced at an early period of his life to high stations both in the church and the state. In 1397, he became bishop of Lincoln; 1399, chancellor of the university of Oxford, and dean of Wells; in 1404, lord high chancellor of England; and in 1405, bishop of Winchester. During the reigns of his brother Henry IV. and his nephew Henry V. he does not seem to have possessed much political importance; but he lived in great splendour, and acquired immense wealth, so that he was able to lend the last-named monarch 20,000*l.* to aid his expedition into France, and thus to divert him from the design of attacking the revenues of the church. Upon the death of Henry the fifth, he was appointed one of the guardians of his son Henry VI. during his minority; and in 1424, he was again made lord chancellor of England. In 1425, the dissensions that subsisted between him and the protector, Humphrey duke of Gloucester, rose to such a height, that Beaufort thought it necessary to appeal to his nephew, the duke of Bedford, then regent of France, and to request his presence, for bringing about an accommodation. Upon

the arrival of the regent, an assembly of the nobility was convened at St. Alban's; but their interposition proved ineffectual; the decision of the contest was referred to the parliament held at Leicester in 1426. The duke of Gloucester produced six articles of accusation against the bishop, of which he was acquitted; and the disputants being enjoined to cultivate mutual friendship, departed with outward appearances of perfect amity. The regent, however, in order to gratify his brother, the protector, took away the great seal from the bishop. In 1428, the duke of Bedford returned to France, and was accompanied by Beaufort to Calais, where he was invested with the dignity of cardinal, with the title of St. Eusebius, conferred upon him by pope Martin V.

The cause of the protector's inveterate enmity against the cardinal is said to have been the part which he had taken in instigating certain persons to accuse and persecute his duchess for treason, witchcraft, and other notorious crimes.

Cardinal Beaufort died in 1447, about a month after the duke of Gloucester, in whose murder he is supposed to have been concerned. The remorse and horror occasioned by the reflection on this event, in the near approaches of his own death, were more than could naturally be expected from a man hardened, during the course of a long life, in falsehood and politics; and they are exhibited in very impressive characters in the representation of his last scene by Shakspeare, in the Second Part of King Henry VI.

> "If thou be'st death, I'll give thee England's treasure—
> Enough to purchase such another island—
> So thou wilt let me live, and feel no pain."

The cardinal was buried at Winchester. He died rich, and left large sums for pious and charitable purposes, in various parts of the kingdom, and he ordered 10,000 masses to be said for his soul.

6. Bishop Latimer was born about the year 1470. He was initiated in school learning in the country, and making a very rapid progress in his youthful studies, he was at the age of fourteen sent to Christ's College, Cambridge, where he was distinguished for his rapid proficiency

in the studies of the place. Here he took his degrees, entered upon holy orders, and was at this period a zealous papist; read the Scriptures and the school-men with the same reverence, and held Thomas-à-Becket and the apostles in equal honour. He had taken alarm at the progress of Lutheranism, and inveighed with great bitterness, publicly and privately, against those principles of which he was hereafter to become a most zealous defender. His zeal as a papist was so distinguished in the university, that he was elected cross-bearer in all public processions, an employment which he is said to have accepted with a high degree of reverence, and to have discharged with much solemnity. Our good divine was a papist from conviction, and had a mind open to arguments on all sides of the question: he fortunately met with Mr. Thomas Bilney, a clergyman of great piety, and who, by the perusal of Luther's works, had become a secret favourer of the reformation. By degrees he infused into the mind of Latimer all those doubts which he had formerly felt respecting the discordance of popery with pure Christianity. Latimer heard the arguments of his friend, and was prepared to dispute the ground inch by inch. At length he found the ground on which he stood absolutely untenable, and acknowledged the errors in which he had been educated. But the temper of the scholar was not like that of the master; he could not be a protestant in secret: he must come forth boldly, and declare the convictions of his heart: he had sought truth as the pearl of great price, and having, as he believed, found it, was determined not to conceal its beauty from his friends and the world. He became an active apostle in the cause of protestantism; he preached in public, he exhorted in private, and every where enforced the necessity of a holy life, in opposition to the superstitious ceremonies and observances inculcated by the Romish religion.

Dr. Buckinham, one of the black friars, was selected to answer from the pulpit the arguments of Latimer; he performed the task with great pomp, but not to the satisfaction even of his own party. The heads of the colleges and the senior members of the university of Cambridge were alarmed, and determined to oppose the progress of heresy; while the students looked with respect and veneration on Latimer and Bilney. They were regarded as the head of the protestant party, which was daily gaining ground. Latimer preached before the king at Windsor, and, encouraged by the gracious reception Henry gave him, he took the liberty of writing a very bold letter to his Majesty, against a proclamation which the clergy had prevailed upon the king to publish, forbidding the use of the Bible in English. The king received the letter with good-humour, and thanked Mr. Latimer for his well-meant advice. Latimer exerted all his powers in forwarding his majesty's designs.

In 1534, Latimer was appointed chaplain to the queen Anne Boleyn, and in the following year was appointed to the bishopric of Worcester.

After the passing of the bloody statute, or the act of the six articles, the bishop protested against it, and resigned his bishopric. Shortly after this, the cruel-minded Gardiner had him charged with speaking against these six articles, and without hesitation committed him to the Tower, where he was imprisoned during the remainder of Henry's reign.

On the accession of Edward VI., Latimer was set at liberty, and might have been restored to his bishopric; but he refused it, and took up his residence with his friend Cranmer at Lambeth, passing his time in hearing the complaints and redressing the wrongs of others.

At the re-establishment of popery, in the reign of queen Mary, he was cited to appear before the council in London. He immediately obeyed, and as he passed Smithfield, the scene of the most horrid cruelties exercised upon those who had been denominated heretics, he said very cheerfully to his attendants, "This place has long groaned for me." The next day he appeared before the council, who, after loading him with many reproaches, committed him to the Tower. His imprisonment was rendered uncommonly severe; but he endured every evil with resignation and true Christian humility. The weather was exceedingly severe, but no fire was allowed him; which led him to tell the lieutenant of the Tower, that, however his enemies might expect he should be burned, unless he was permitted to have a fire this frosty weather, he should be first starved to death with cold. About this time archbishop Cranmer and bishop Ridley were committed to the Tower, which became so crowded with prisoners, that the three prelates were confined in the same room; a circumstance which no doubt they greatly enjoyed. The pleasure, however, was of short duration: they were hurried to Oxford, under pretence of a public disputation to be held there by the most eminent divines on both sides. At this place they were most closely confined in the common prison, and deprived of every comfort, and of almost all the necessaries of life; hence they readily inferred what kind of disputation would be allowed them. They fully expected that the argument of power was the only one that would be resorted to; and having made up their minds to this, Latimer said he should give them very little trouble. "I shall," said he, "offer them a plain account of my faith, and say but little more; for I know that any thing more will be to no purpose. They talk of free disputation; but I am assured their grand argument will be, as it was that of their forefathers, *We have a law, and by our law you ought to die.*" When he was brought into court, he had a cap on his head, buttoned under his chin, a pair of spectacles hanging at his breast, a New Testament under his arm, and a staff in his hand. He was exhausted in pressing through the crowd, and was permitted to sit down. After a sufficient pause, he was told he must dispute against the articles brought against him. He declared he was unable through age to do any such thing. "I am not able to debate," said the venerable old man: "I will avow my faith, and then do with me as you please." He was insnared, by the artful conduct of his accuser, to make concessions which were against him, and upon this the prolocutor arose, and exclaimed to the populace, "Here you see the weakness of heresy against the truth. Here is a man, who, adhering to his errors, hath given up the gospel, and rejected the fathers." The good old man made no reply, but wrapping his gown about him, and taking his New Testament and his staff, walked out with the greatest composure. On the following Friday he was again brought into court, was first excommunicated, and then condemned to death. As soon as the sentence was read, Latimer, lifting up his eyes to heaven, exclaimed, "I thank God most heartily, that he hath prolonged my life to this end."

No steps were taken towards putting the sentence against the prelates into execution for a year and a half, when Latimer and Ridley underwent the mockery of another trial for heresy. Their execution was fixed for the 16th of October, and the place fixed on was the north side of the city, near Baliol College. Lest the bloody scene should excite a tumult, the military were ordered to attend the place of execution on the day appointed. The vice-chancellor of Oxford and other persons of distinction repaired to the spot which was to witness the sufferings of these worthy men. The prisoners, at the fixed hour, were sent for, and the concern of the spectators, which was apparent in every countenance, excepting in those who were actors in the scene, was greatly augmented by the striking contrast of their appearance. Ridley was dressed in his episcopal habit, showing what they had formerly been; and bishop Latimer wore his prison attire, by which he exhibited the condition to which they were reduced. Having heard a sermon by a popish doctor, in which they were treated with great inhumanity, they prepared for their last trial, and were chained to the stake. The fire was speedily kindled, and at the sight of the flames Latimer exclaimed, "Be of good cheer, master Ridley, and play the man: we shall this day light such a candle, by God's grace, in England, as I trust shall never be put out." He then recommended his soul to God, and a few minutes put an end to the sufferings of these noble martyrs. Such was the glorious and triumphant end of Latimer, who had been indefatigable in the discharge of the duties of life, and who exhibited the most astonishing firmness and composure in the several trials to which he was exposed.

7. Cardinal Wolsey was the son of a butcher at Ipswich, Suffolk, and born there in 1471. He finished his education at Magdalen College, Oxford, and was graduated B. A. at the age of fifteen. He was afterwards fellow of his college, and having taken the degree of M. A., became master of the school dependent upon that college, where he had under his tuition three sons of the marquis of Dorset, by whom he was presented to the rectory of Lymington, in Somersetshire, into which he was inducted in 1500. His advancement was rapid, first as domestic chaplain to the archbishop of Canterbury, and afterwards as chaplain to the household of Henry VII. His manners were insinuating, and he became the confident of the king, who communicated to him his projected

marriage with the daughter of the emperor Maximilian. Wolsey met the emperor at Bruges, and executed his commission so much to the king's satisfaction, that he nominated him to the deanery of Lincoln. After the death of Henry VII., he was recommended by Fox, bishop of Winchester, to Henry VIII., whose favour and confidence he conciliated by his blending amusement with business, insomuch that he supplanted the ministers of the late king, and became himself uncontrolled minister. His preferments, civil and ecclesiastical, very speedily succeeded one another, and even profusely accumulated. He was introduced into the privy council in 1510, made reporter of the Star-chamber, registrar, and afterwards chancellor of the Garter; and advanced to the sees of Tournay and Lincoln in 1513, to that of York in 1514, and to the dignity of cardinal in 1515. Thus promoted, his pride and love of pomp kept pace with his elevation of rank. In his train of servants, 800 in number, were many knights and gentlemen; and the sons of noblemen acted occasionally as his menials. His equipage and furniture were of the most costly kind. The most pardonable, not to say laudable, display of his magnificence, was exhibited in his patronage of literary men, and promotion of literature, both by the exercise of private bounty and the establishment of public institutions. The pope nominated him legate *à latere*, by which office he acquired legal pre-eminence over the archbishop of Canterbury; and in December, 1515, he was elevated to the office of high chancellor. Charles V. and Frederic I. purchased his interest with Henry VIII. by pensions, and he was also retained in the same way by the pope. Charles flattered him with hopes of the papal crown, and settled upon him the revenues of two bishoprics in Spain. Still insatiable in the pursuit of ecclesiastical preferments, he obtained the administration of the see of Bath and Wells, and the temporalities of the Abbey of St. Alban's, to which were afterwards added successively the rich bishoprics of Durham and Winchester. His revenues, thus amounting to nearly that of the crown, were expended partly in the ostentation of pomp, and partly in laudable munificence. He founded several lectures at Oxford for liberal and useful studies, and at length erected in that university the celebrated college of

Christ-church. He also established a collegiate school in his native town of Ipswich. The palace which he built at Hampton Court he presented to the king in 1528, and he further ingratiated himself with Henry by an arbitrary loan for the supply of his wants; but by these measures he became more and more odious to the nation. But his fall was approaching, and the first step to it was the divorce of queen Catherine. This was followed by the marriage of Henry with Anne Boleyn, whose influence was employed in effecting his downfal. At length the king, not without hesitation and reluctance, employed the dukes of Norfolk and Suffolk, in 1529, to require him to surrender the great seal, and to quit York Place, a palace which he had built in London, and which afterwards became a royal residence, under the name of Whitehall. His furniture and plate were seized for the king's use, and he was ordered to retire to Esher, a palace which belonged to him as bishop of Winchester. These measures overwhelmed the favourite, destitute of any inward resources of magnanimity; and when he received a slight token of the king's favour in this state of mental depression, he was transported with joy, dismounted on meeting the messenger, and fell upon his knees in the dirt to receive the expression of his master's kindness. Henry, however, was capricious and inconstant: a cloud overspread this gleam, and Wolsey was ordered to be indicted in the Star-chamber, and abandoned by his sovereign to the rigour of parliament. An accusation of 44 articles was exhibited against him in the house of lords and in the commons: he was so ably defended by Thomas Cromwell, who had been raised by the cardinal from a low condition to a high station, that his enemies were defeated. But fresh tokens of royal displeasure awaited him. The duke of Northumberland was ordered to arrest him for high treason, and to conduct him to London for trial. In his way from York to London he was seized with a disorder which obliged him to stop at Leicester, where he was hospitably received at the abbey. His disorder in a few days terminated his life, in the 60th year of his age. Shortly before he died, he closed a conversation with the constable of the Tower, which related to the king, with this exclamation: "Had I but served God as diligently as I have served the king, he would not have given me over in my grey hairs!" Thus he sunk to the grave, a victim to tyranny, but to a tyranny which he had himself formed; exhibiting an instructive example to all future ministers of the insecure possession of power and wealth acquired by extortion and oppression.

The magnificence of the cardinal's chapel establishment, as described by Cavendish, his contemporary and domestic, seems far to have surpassed that of the Roman pontiff himself.

"First, he had there a deane, a great divine, and a man of excellent learning; a sub-dean, a repeatour of the quire, a gospeller, and epistoller; of singing priests, ten; a master of the children. The seculars of the chapell, being singing-men, twelve; singing-children, ten, with one servant to waite upon them. In the vestry, a yeoman and two grooms; over and besides other retainers, that came there at principal feasts. And for the furniture of his chapell, it passeth my weak capacity to declare the number of the costly ornaments and rich jewels that were occupied in the same. For I have seen in procession about the hall forty-four rich copes, besides the rich candlesticks, and other necessary ornaments to the furniture of the same."

In his *cuisine* establishment he was not less profuse. In the hall-kitchen were two clerks, a clerk-comptroller, and a surveyor of the dresser; a clerk of the spicery; also two cooks, with assistant labourers, and children-turnspits, twelve persons; four men of the scullery; two yeomen of the pastry, and two paste-layers under them.

In his own kitchen was a master-cook, who was attired daily in velvet, or satin, and wore a gold chain; under whom were two cooks and six assistants. In the larder, a yeoman and a groom; in the scullery, a yeoman and two grooms; in the buttery, two yeomen and two grooms; in the ewry, two yeomen and two grooms; in the cellar, three yeomen and three pages; in the chandry, two yeomen; in the wafery, two yeomen; in the wardrobe of the dormitory, the master of the wardrobe, and 20 assistant officers; in the laundry, a yeoman, groom, and 13 pages, two yeomen-purveyors, and a groom-purveyor; in the bake-house, two yeomen and two grooms; in the wood-yard, one yeoman and one groom; in the barn, one yeoman; at the gate, two yeomen and two grooms; a yeoman in his barge, and a master of his horse; a clerk of the stables, and a yeoman of the same; a farrier, and a yeoman of the stirrup; a maltlour, sixteen grooms, every one keeping four horses.

8. **Cranmer** was the most eminent prelate that ever filled the archiepiscopal see of Canterbury. He was born at Aslacton, in Nottinghamshire. At the age of 14, he was admitted to Jesus College, Oxford. By his great diligence in his academical studies, and by his zeal in the pursuit of biblical knowledge, he acquired very high reputation, and quickly obtained a fellowship and the degree of M. A. The former he soon lost by marrying; but his wife dying within a year of his entering the holy state, he was again admitted fellow of his college; a rare circumstance, and at the same time a signal proof of the respect and affection in which he was held by his friends. In 1523, he took the degree of D. D., and was appointed theological lecturer and examiner: in both capacities he rendered the most essential services to the interests of learning and religion. He had not long retained these offices, before the plague obliged him to retire for safety to Waltham Abbey, where, meeting with Dr. Fox, the king's almoner, and Dr. Stephen Gardiner, the secretary, the conversation turned upon the subject of the king's divorce from queen Catherine. Cranmer's opinion was conveyed to king Henry, who immediately appointed him one of his chaplains, and commanded him to write in justification of the intended divorce. The doctor quickly produced a work which completely coincided with the monarch's views, by proving from the Scriptures, and by an appeal to the decisions of general councils and ancient writers, that the pope possesses no power to dispense with the word of God. Cranmer argued the point so successfully at Cambridge, and made so many converts to his opinion, that he was sent by his sovereign to debate the matter on the Continent with the divines of France, Italy, and Germany. While on this mission, he married a second wife at Nuremberg, and on his return, in 1533, he was raised to the high office of archbishop of Canterbury, with the sole view, no doubt, of sanctioning the conduct of the king; and accordingly,

in the following May, he pronounced the sentence of divorce between Henry VIII. and Catherine, and confirmed the king's marriage with Anne Boleyn. These acts excited the vengeance of the pope, who threatened to excommunicate the archbishop; but he had already set at defiance his power, by refusing to accept his office unless it were bestowed immediately by his own sovereign, without the intervention of his holiness. He therefore heard the denunciations uttered against him without anxiety, and exerted all his powers in behalf of the reformation. In the same year he was very instrumental in procuring an act of parliament which abolished for ever the pope's supremacy in these realms, and which declared the king supreme head of the church. His next objects were the translation of the Scriptures into English, and the dissolution of monasteries, which had long been regarded as incompatible with those principles of virtue and religion, in behalf of which they had been originally instituted.

Upon the demise of Henry, in 1546, Cranmer crowned the young king, and was, during the short reign of that sovereign, very zealous in promoting the reformation. He took a very active part in composing, correcting, and establishing the liturgy, and in compiling the Thirty-nine Articles. At this period, it cannot be denied the archbishop exercised his power with cruelty, and without that regard to the rights of conscience in others which he had formerly claimed for himself.

In the year 1553, he showed himself adverse to the settlement of the crown on lady Jane Grey, though he was at length persuaded to set his hand to it; and on the death of Edward, he avowedly espoused her cause, and became a member of her council. The triumph of Mary forewarned him that he had little to hope for. Clemency, and even justice, were well nigh banished from the new court, and the friends of Cranmer urged him to seek for safety by retiring to a foreign country. But feeling that the dignity of his character and the cause of the reformation required him to make a stand, he replied, it would not be fit for him to leave his post, and thus, as it were, disavow the changes that had been made by his means in religion, during the late reign. It was now probably that the prediction of Christ to Peter must have smitten the mind of Cranmer: " They that take the sword, shall perish by the sword."

He had been a persecutor, and must fall by the same merciless means. He was tried on a charge of high treason, in joining the party of lady Jane: of this he was convicted, when his see was declared vacant, and the fruits of it sequestered. He supplicated for pardon, which was granted, but only that he might be tried on the charge of heresy, of which he was also convicted. As yet the pope's authority had not been established in England, and it was thought necessary to repeat the mock trial, on an indictment charging him with blasphemy, perjury, and heresy. On this occasion, Cranmer refused every testimony of respect to the representative of the pope, and defended himself with much ability and firmness. But reason had no effect with judges who were endeavouring to banish reason from the world: he was condemned, and most cruelly treated, especially by Bonner, whose name has been transmitted to posterity with the infamy it merits. The archbishop bore all with an undaunted heroism, till the prospect of death overcame his virtuous resolution; then he signed a recantation of his religious principles. His enemies having thus obtained a signal victory, lost no time in printing and dispersing every where the recantation, determined at the same time to take away his life. On the 24th of February, a writ was signed for burning Cranmer, and on the 24th of March, he was brought to St. Mary's church, Oxford, to hear a discourse previously to the fatal tragedy. Dr. Cole, provost of Eton, was appointed to preach on the occasion. While he was haranguing the audience, the unfortunate prisoner expressed the greatest contrition for having been betrayed into the dastardly act of recantation; but the spectators supposed that the tears which he shed were on account of his former heresy. At length Cole, with a malignant countenance, desired him to make an open profession of his faith; when Cranmer avowed his belief in all that had been taught by Christ and his apostles in the New Testament, and by the prophets in the Old. " And now," said he, " I come to that which hath so much troubled my conscience, more than any thing I ever did or said in my whole life; and that is, the setting abroad a writing contrary to the truth; which I here now renounce, as things written with my hand contrary to the truth which I thought in my heart; and written for fear of death, and to save my life, if it might be. And forasmuch as my hand offended, contrary to the dictates of my heart, my hand shall be first punished." Astonished and enraged at this unexpected declaration, the bigoted and savage mob dragged him to the place of martyrdom, where he was quickly fastened to the stake: here his resolution was undaunted, and he nobly obliterated the stain which had been made upon his character by recantation. "This is the hand that wrote it," says he, "and therefore it shall first suffer punishment." He accordingly stretched his right hand into the flame, where he kept it unmoved till it was consumed. In a short time the fire attacked his vital parts, and he died repeating the words of the martyr Stephen, "Lord Jesus, receive my spirit!" Such was the end of Thomas Cranmer, in the 67th year of his age.

9. Archbishop Laud was the son of a clothier at Reading: he was born in October 1572, and early in life was made bishop of St. David's, translated to the see of Bath and Wells, afterwards to the see of London, and ultimately became archbishop of Canterbury.

Laud persecuted the Presbyterians with as much intolerance as some of his predecessors had exercised towards the Protestants. Upon the assassination of the duke of Buckingham, Laud prevailed on the king to send to the judges for their opinion, "whether, by law, Felton might not be racked?" They returned a decided opinion, "that he could not be racked by the laws of England." One proof of the extreme rigour and cruelty of Laud, who was the leading member of the high commission court, may be given in the proceedings against Alexander Leighton, a Scotch Presbyterian divine, who was convicted (which in those days was only another name for being accused) of publishing a work, entitled "An Appeal to the Parliament; or Zion's Plea against Prelacy:" for which he was sentenced to an imprisonment for life, and to pay a fine of 10,000*l.*; to be set in the pillory twice, to be whipped, have one of his ears cut off, one side of his nose slit, and be branded in the face with S. S., as a sower of sedition. When this savage sentence was passed on him, the cruel Laud exhibited signs of the most indecent joy, and publicly gave God thanks for it. Excepting the imprisonment for life and the fine, the sentence was put into execution to the fullest extent. He was released by the long parliament, after an imprisonment of ten years. His confinement and cruel usage had so impaired his health, that when he was released he had scarcely the power of walking, seeing, or hearing. Even-handed justice at length overtook this wicked man. He was impeached on a charge of high treason, by Sir Henry Vane the younger, in the name of the house of commons, and was committed to the Tower. In his passage thither, he had to undergo the loud and deep execrations of an enraged populace. His confinement was very severe; and he felt in his own person such sufferings as must have brought to his recollection what he, in the day of his power, had inflicted upon others. After an imprisonment of nearly three years, he was brought to trial upon twenty-four articles exhibited against him. The archbishop defended himself with such extraordinary ability, eloquence, and presence of mind, as staggered the lords, and they deferred giving judgment till the commons thought fit to bring in a bill of attainder, which, after much delay, was passed. By this bill he was condemned to be hanged. All the favour he could obtain was to have his sentence altered from hanging to decapitation. He met his death with great firmness on Tower-hill, on the 10th of January, in the seventy-second year of his age.

LES DIX.

TITHES, the tenth part of the increase yearly arising from the profits of lands, the stock upon lands, and the personal industry of the inhabitants, allotted to the clergy for their maintenance.

The custom of giving or paying tithe is very ancient In Gen. xiv. 20, Abraham gives Melchisedech the tenth of all the spoils he had taken from the four kings he had defeated. In Gen. xviii. 22, Jacob makes a vow at Bethel to give the tenth of all the riches he shall gather in that sojourn to God.

Tithe was first legally enjoined by Moses, Lev. xxvii. 30. Numb. xviii. 21. Deut. xiv. 22. That legislator obliged the Israelites to the payment of several kinds of tithes.

X PLAGUES of EGYPT. When Moses and Aaron were sent to deliver the people of Israel, upon Pharaoh's refusal, they, by the authority and power of God, brought ten miraculous plagues upon the king and all the land, viz.:—

1. The waters were all turned into blood, and the fish all died. This plague lasted seven days.
2. The plague of frogs, which covered the whole land, entering the houses, and filling the beds, ovens, &c.
3. The dust of the land became lice in man and in beast.
4. The swarm of flies, which corrupted the whole land, except Goshen, where the Israelites had their dwellings.
5. The murrain of all the cattle.
6. The plague of boils and blains upon man and beast.
7. The fall of hail, and fire ran along the ground, which smote every herb and tree of the field, and every man and beast found in the field, except only in the land of Goshen, where the children of Israel were.
8. The plague of locusts, a kind of grasshopper, which eat and destroyed every thing that the hail had left.
9. Darkness over all the land, even darkness which might be felt, and it lasted three days.
10. The death of the first-born of all the Egyptians, "from the first-born of Pharaoh that sat on his throne, unto the first-born of the captive that was in the dungeon; and all the first-born of cattle." In one night there was not a house in which there was not one dead.

X COMMANDMENTS, The, called the Decalogue, are to be found in the twentieth chapter of Exodus. They were given to the Israelites by the voice of God, through Moses, on Mount Sinai, three months after their deliverance out of Egypt.

X CHIEF INGREDIENTS employed by the ancients in the art of DYEING.

The origin of this art is involved in that obscurity which pervades the history of all the arts connected with the common wants and necessaries of life. They have originated in times beyond the reach of history or tradition, and are the offspring of the natural faculties of man, directed by the great primeval wants of food, shelter, and raiment. The art of dyeing is, of course, posterior to many of these, and is founded less on the necessities than passions of mankind. A love of distinction is common to man in every stage of civilisation; but that passion for admiration which is displayed in a love of finery and ornament is peculiar to him in his most barbarous and uncultivated state. Hence savage nations delight in the most brilliant and gaudy colours; and many paint their skins, and adorn themselves with feathers, stones, and shells of various hues. History has not furnished us even with her fables on the origin of dyeing; but from analogy, as well as observation of the practice of barbarous nations at the present day, we may trace the rude beginnings from whence the art has sprung. The rich and gaudy plumage of birds, the finely-spotted skins of animals, coloured stones, and such other substances as nature herself supplies, would afford the first materials for savage finery and dress. The caps and mantles of the chiefs of the South Sea islands, such as were brought home by captain Cook, are composed almost wholly of feathers richly coloured.

The colour which appears to have been earliest brought to perfection, and which was held in such high estimation among the ancients, is purple. It was to chance alone, according to the tradition of antiquity, that they owed this discovery. A shepherd's dog, instigated by hunger, having broken a shell on the sea-shore, his mouth became stained with such a colour as excited the admiration of all who saw it. They endeavoured to apply it to stuffs, and succeeded. There is some discordance in the details of the ancient writers of the circumstances of this event. Some place this discovery in the reign of Phœnix, second king of Tyre, that is to say, a little more than five hundred years before Christ: others at the time that Minos the first reigned in Crete, about 1439 years before the

Christian era. But the greatest number agree in giving the honour of the invention of dyeing purple stuffs to the Tyrian Hercules. He gave his first trials to the king of Phœnicia, who was so jealous of the beauty of this new colour, that he forbade the use of it to all his subjects, reserving it for the garments of royalty alone.

The testimony of Homer confirms the antiquity of this discovery. He ascribes to the heroes of that age ornaments and cloths of purple.

The ancients had such an esteem for this colour, that it was especially consecrated to the service of the Deity. Moses used stuffs of purple for the works of the tabernacle and the habits of the high priest. The Babylonians gave purple habits to their idols: it was the same with most of the other people of antiquity. The Pagans were even persuaded that the purple dye had a particular virtue, and was capable of appeasing the wrath of the gods.

We may form some idea of the state of the art of dyeing amongst the Romans, from the enumeration of the different colours which were in use, and the substances employed in producing them. In addition to those enumerated by Pliny, we find that in the equestrian games of the circus the different divisions were distinguished by the colours *green*, color prasinus; *orange*, rufatus; *grey*, venetus, and white.

In addition to the purple fish, Mr. Bischoff mentions the following ingredients which were used by the ancients:—

1. Alum.
2. Alkanet. This substance was also used by women as a paint.
3. The blood of birds, which was used amongst the Jews.
4. The Fucus: that of Crete was preferred, and it was generally employed as a ground or preparative for valuable colours.
5. Broom.
6. The Violet, from which the Gauls prepared a kind of purple.
7. Lotos medicago arborea, snail trefoil: the bark was used in dyeing skins, and the root in dyeing wool.
8. The bark of the walnut-tree, and the peel of the shell.

9. MADDER.

10. WOAD.

For a long time Italy, and especially Venice, possessed the art of dyeing almost exclusively; a circumstance which contributed to the prosperity of their manufactures and commerce: by degrees it was introduced into France. Giles Gobelin, to whom the process for making the true scarlet had been communicated, established a manufactory in the place which still bears his name; and this undertaking was deemed so rash, that it was termed *Gobelin's folly*.

The attention of the Royal Society of London appears to have been directed to the improvement of the art of dying in 1662. Though we cannot record any very brilliant discoveries, the art with us has continued progressively to improve; the different processes have been simplified and amended; and what some years ago was considered a matter of chance and uncertainty, is now reduced to fixed principles.

X SORTS of EARTH. There are ten different earths, of which the varied appearances of hill, vale, rock, mountain, the richest loam, and the most sterile sand are composed, called BARYTES, STRONTITES, LIME, MAGNESIA, SILEX, ALUMINE, ZIRCON, GLUCINE, YTTRIA, THORINA.

BARYTES. This earth bears a strong resemblance to the alkalies, having a caustic taste, changing vegetable blues to green, and serving as an intermedium between oil and water.

STRONTITES resembles the alkalies in many of its properties, and, like the former earth, is found generally in combination with carbonic or sulphuric acid.

LIME is never found pure, but generally in combination with carbonic, fluoric, or sulphuric acid; as in marble, Derbyshire spar, gypsum, &c. Like the two former, it agrees with the alkalies in most of its chemical properties, and may be crystallised. It is the basis of all animal bones.

MAGNESIA. This earth, in a minor degree, possesses the properties of the alkalies. It is never found pure, but always in combination with some acid, and exists in many springs, minerals, &c.; but is chiefly obtained from sea water, after the preparation of common salt.

Silex. This earth, when obtained pure, is perfectly white and tasteless; infusible but by the most intense heat, and affected by no known acid except *fluoric*. It is, however, dissolved in water by nature; and forms those beautiful stalactites which adorn the interior of caverns. It composes the greatest part of flints, quartz, sand, gravel, &c., and is one of the most valuable earths known; being necessary for the formation of glass, porcelain, pottery, artificial gems, &c. &c.

Alumine. This earth, when pure, is tasteless and without smell; and with water forms a cohesive, ductile mass. When heated, it contracts proportionably in bulk; and on this property the *pyrometer* is constructed. It is the basis of alum, and enters into the composition of all clays, fuller's earth, &c.; and it is to its presence that they owe both their plasticity and tenacity. It is found crystallised in the sapphire and adamantine spar.

Zircon. This earth, in external appearance, when precipitated and dried, much resembles gum arabic. When fused and cooled, it becomes hard like flint; and like it produces scintillations with steel and cut glass. It is found crystallised in the hyacinth and zircon; but, from its scarcity, has not been applied to any useful purpose.

Glucine. This earth, in some of its properties, bears a considerable resemblance to alumine. In combinations with acids, it forms compounds having a sweet taste, from whence it derives its name. It is found in the emerald and aqua-marina; but, from its scarcity, has not been of any service to the arts, &c.

Yttria. This earth, when pure, is perfectly white, without taste or smell. It has an unctuous feel, is insoluble in water, and infusible, except in very powerful heat. It is obtained from the godolinite.

Thorina is obtained from a species of godolinite; but like the three former, from its scarcity, has not been applied to any use in the arts.

X SORTS of ENGLISH WOOL. The wool-sorters divide the wool obtained from English short native fleeces into the following sorts, varying in degree of fineness from each other, which are called,

Prime,
Choice,
Super,
Head,
Downrights,
Seconds,
Fine abb.
Coarse abb.
Livery,
Short coarse, or breech wool.

The argali, from which all the varieties of sheep are supposed to be derived, is covered with short hair, at the bottom of which, close to the skin, there is a softer hair or down. This is not peculiar to the argali; almost all quadrupeds inhabiting cold climates are covered in the same manner. When removed to a temperate climate, or protected from the inclemencies of the weather, and supplied regularly with food, the coarse hair falls off, and the animal retains only the shorter hair or wool. It is also observed, that European sheep removed to tropical climates soon become sickly, and lose their fleece, which is succeeded by a covering of short coarse hair. In countries where manufactures have once flourished, their effects continue for a long time visible in the race of sheep which remain there. The Tarentine fine-woolled sheep, so much valued by the Greeks and Romans, were obtained from Asia Minor. It is probable that these sheep came originally from the more eastern seats of luxury, where the soft fleeces are now grown, of which the shawls and cloths of India are fabricated. In Sicily and the southern parts of Italy, the Tarentine breed preserve to the present day a race of fine-woolled sheep, but greatly degenerated by neglect. In Portugal, the fine-woolled sheep retain more of their original purity, but are still much neglected. In Spain, attention to the growth of fine wool appears never to have been entirely lost sight of; and it is here that the finest race exists in the highest perfection, though probably inferior to the original Tarentine.

Of the English wools, those of Hereford and Sussex approach the nearest in fineness to the Spanish. The Saxony wools generally possess a greater degree of softness than even the Spanish; which is believed to be owing to their being less exposed to the action of the light and heat.

The art of spinning or weaving threads made from wool was, in all probability, derived from the East. They are alluded to by Moses as existing nearly fifteen hundred years before the Christian era; and it appears that the early patriarchs had numerous flocks of sheep.

The Romans established the first cloth manufactory in England at Winchester. The next account of any distinct body of manufacturers occurs in the reign of Henry I. In the 31st of Henry II., the weavers of London received a confirmation of their guild.

The woollen manufacture, which includes all sorts of broad cloths, kerseys, flannels, stuffs, &c., now forms one of the chief commodities of our foreign and domestic trade; and in the west riding of Yorkshire it employs at least two-thirds of the population.

Cotton is another of our staple commodities; and some account of it may perhaps be appropriately inserted here. Cotton is the spontaneous production of three parts of the earth, and is found growing naturally in all the tropical regions of Asia, Africa, and America; whence it has been transplanted, and become an object of cultivation in the southern parts of Europe.

The progress of the cotton manufacture in England during the last century affords a splendid instance of the successful application of industry and talent, unparalleled in the annals of commerce.

In 1750, the population engaged in this manufacture did not exceed 20,000, and was little more than doubled in the next twenty years. From this state of comparative insignificance it burst forth at once, with a vigour and activity which have no example, and became, in the short space of thirty years, one of the most flourishing and important branches of our national industry.

X DENOMINATIONS of ENGLISH MONEY. The coins issued during the reign of George IV., and now current in Great Britain, are only ten in number; namely, the DOUBLE-SOVEREIGN, SOVEREIGN, HALF-SOVEREIGN, CROWN, HALF-CROWN, SHILLING, SIX-PENCE, PENNY, HALFPENNY, and FARTHING.

The origin of money seems to have been coeval with the first regulation of civilised society; or, at least, it is too remote to be traced by any authentic history. The invention of this common measure or standard, according to which all other things should be estimated, is ascribed by some persons, on the authority of Josephus, to Cain; although the first information that has been transmitted concerning it, originates with the patriarch Abraham, who had paid four hundred shekels for a burying-place. The Greeks refer the invention of money to Hermodice, wife of king Midas; and the Latins to Janus. Barter, that is, the exchange of one commodity for another, was the ordinary mode of traffic in the earlier periods of the world: thus we find in Homer, that Glaucus's golden armour was valued at a hundred oxen, and Diomedes's armour at ten. This method, which is still in use among savage nations, must have been found extremely inconvenient in the early ages of commerce: hence the necessity of adopting some commodity of general utility and demand as a measure of value. This necessity and its expedient are well explained by Aristotle. "All useful things," says the philosopher, "could not, without great difficulty, be transported from place to place: it was resolved, by common consent, that, in bartering commodities, they should reciprocally give and receive some substance, which being in its nature applicable to the purposes of life, might, at the same time, be easily carried about."

In all nations where commerce has made any considerable progress, the precious metals, either in coins or ingots, or their representative value in paper, have been adopted as money. Other substances, however, are still used for this purpose in different countries, especially for the common or inferior purposes of trade; as cowries, or small shells, in India, and salt, bricks, and beads, in Abyssinia.

Among the ancient Britons, iron rings, or, as some say, iron plates, or tin plates and rings, were used as money. Among the Lacedemonians, iron bars were quenched with vinegar, thus intending that they should not serve for any other use. Seneca observes, that there was anciently stamped money of leather; and the same thing was put in practice by Frederick II. at the siege of Milan; to say nothing of an old tradition among ourselves, that in the confused time of the barons' wars, the like was done in England. In 1360, king John of France, who agreed to pay our Edward III. for the ransom of his person 3,000,000 of gold crowns, was reduced to the necessity of paying for the necessaries of his household in leather money, in the middle of which there was a little nail of silver. The Hollanders, we know, coined great quantities of pasteboard in the year 1574. Numa Pompilius made money of wood and leather; nor does it appear that the Romans were much acquainted with the art of striking money in metal during the time of their kings. There is reason to believe, that both gold and silver money were very early in use in Egypt and Asia, and thence soon afterwards introduced into Carthage and Greece. From Greece it was brought to Rome, and thence gradually westward into all the Roman provinces.

The first shape in which money appeared was that of pieces of metal, without any stated form or impression, but merely regulated to a proper weight; for *weight* was the grand standard of ancient coinage, so that all large sums were paid in weight, even down to the Saxon period of England. With us, weight is now applied to each particular piece, and that only in gold: whereas, with the ancients, weight was applied to the sum total, to silver as well as gold; nay, in some instances, to brass.

In Greece and Rome, the first estimation of money was likewise by weight. Silver was the first metal used in Grecian coinage, but copper in the Roman; the former metal having been long unknown to the Romans. The gold coinage of Rome began, according to Pliny, sixty-two years after the silver; that is, in the 547th year of the city, or 204 B. C.

The *impression* of money may be traced back to a very early period. The Jews, though they detested images, stamped on the side of their shekels a golden pot which had the manna, and on the other Aaron's rod; the Dardans, two cocks fighting; the Athenians with an owl or an ox. The Romans sometimes impressed the images of men that had been eminent on their coins; but no living man's head was ever stamped on the Roman coin till after the fall of the commonwealth; after that time, they bore the emperor's head on one side; and ever since, the practice of stamping the prince's head on coins has been adopted in all civilised nations, the Turks and Mahometans excepted, who, in detestation of images, inscribe only the prince's name, with the year of transmigration of their prophet.

Mr. Camden observes, that the most ancient English coin he had known was that of Ethelbert, king of Kent, the first Christian king in the island; in whose time all money accounts began to pass by the names of pounds, shillings, pence, and mancuses. A mancus was equal in value to thirty-pence.

Though the coinage of money be a special prerogative of the king, yet the ancient Saxon princes communicated it to their subjects; insomuch, that in every good town there was, at least, one mint, but at London eight; at Canterbury four for the king, two for the archbishop; one for the abbot at Winchester; six at Rochester; at Hastings two, &c.

In the time of king John, money coined in the east parts of Germany came into special request in England, on account of its purity, and was called *easterling money*, as all the inhabitants of those parts were called *easterlings;* and shortly after, some of those people skilled in coining were sent for hither, to bring the coin to perfection, which ever since has been called *sterling*, from *easterling*.

King Edward I., who first adjusted the measure of an ell by the length of his arm, herein imitating Charles the Great, was the first, also, who established a certain standard for the coin, which is expressed to this effect by Gregory Rockley, mayor of London, and mint-master. "A pound of money containeth twelve ounces; in a pound there ought to be eleven ounces, two easterlings, and one farthing, the rest alloy: the said pound ought to weigh twenty shillings and three-pence in account and weight; the ounce ought to weigh twenty-pence, and a penny twenty-four grains and a half. Note, that eleven ounces two-pence sterling ought to be of pure silver, called *leaf-silver;* and the minter must add, of other weight, seventeen-pence halfpenny farthing, if the silver be so pure."

About the year 1320, the states of Europe first began to coin gold; and among the rest, our king Edward III. The first pieces he coined were called Florences, as being coined by Florentines; afterwards he coined nobles;

then rose-nobles, current at six shillings and eight-pence; half-nobles called *halfpennies*, at three shillings and fourpence of gold; and quarters, at twenty-pence, called *farthings of gold*. The succeeding kings coined rose-nobles and double rose-nobles, great sovereigns, and half Henry-nobles, angels, and shillings.

X PERSECUTIONS of the CHRISTIANS. Nero set on foot the first, A. D. 65; the second happened under Domitian, A. D. 90; the third began under Trajan, A. D. 100; the fourth under Adrian, A. D. 126, which was continued under Antoninus Pius, A. D. 140; the fifth under Marcus Aurelius, A. D. 162; the sixth under Severus, A. D. 203; the seventh under Maximus, A. D. 236; the eighth under Decius, A. D. 251; the ninth under Valerian, A. D. 258; and the tenth under Dioclesian, A. D. 303.

X PRINCIPAL HEATHEN GODS. The most ancient of them were CHAOS, and his son EREBUS; or, confusion and darkness. SATURN, one of their descendants, is the same as Time: his reign is called the Golden Age; and it is said, that then the earth produced corn and fruits without labour, and justice prevailed among all mankind. Saturn was deposed by his son JUPITER, called also Jove, who divided his father's power between himself and his two brothers, NEPTUNE and PLUTO. Jupiter was to reign over heaven; and was said to have held his court or council of the gods on the top of Olympus, a mountain in Thessaly. Neptune was the god of the sea. The dominions of Pluto, the god of the infernal regions, were divided into two parts, Tartarus and Elysium. Tartarus was the place where the souls of the wicked were punished, and Elysium was the scene of perpetual happiness, allotted to the good. The passage from earth to these regions was across the river Acheron, over which the departed spirits were conveyed by an old boatman, named Charon; and the farther bank was guarded by a dog with three heads, named Cerberus. MARS, the son of Jupiter, was the god of war. APOLLO, another son of Jupiter, was the god of music, poetry, and medicine. Apollo is also called Phœbus and Hyperion. MERCURY, also a son of Jupiter, was the messenger of the gods. He is said to have been the inventor of letters; hence the god of eloquence, and the god of trade; thence also of thieves: he was also called Hermes. VULCAN, the god of fire and smiths, was the artificer of heaven, and made the thunderbolts of Jupiter. One of his principal forges was in Mount Etna. He was also called Mulciber.

The foregoing were the principal gods; but there were many inferior. Thus, BACCHUS was the god of wine; EOLUS, god of the winds; MOMUS, the god of satire, laughter, and jokes; PLUTUS, the god of riches; HYMEN, the god of marriage; CUPID, the god of love; PAN, the god of shepherds; HERCULES, the god of strength; and other rural deities, satyrs, fauns, and sylvans, &c. &c.

X PRINCIPAL HEATHEN GODDESSES. JUNO, the wife of Jupiter, and queen of heaven. MINERVA, daughter of Jupiter, and goddess of wisdom and war. DIANA was the twin-sister of Apollo; she was the goddess of hunting and chastity. VENUS, the wife of Vulcan, and mother of Cupid, was the goddess of beauty and love. VESTA was the goddess of the earth and fire. CERES was the goddess of corn and of harvests. CYBELE was one of the most ancient of the goddesses, being the wife of Saturn. PROSERPINE was the wife of Pluto, and queen of the infernal regions. AMPHITRITE was the wife of Neptune. Her sister was Thetis, another sea-goddess. There were nine inferior goddesses; for which see the numbers IX.

X GATES of JERUSALEM. In ancient Jerusalem there were ten gates; five from west to east by the south, and five others by the north. Nehemiah mentions also four towers. It is not easy to ascertain the extent of this city in its different changes. Its most ancient state of perfection was in the reign of Solomon, in whose time this city appeared in its greatest splendour: its circumference at first was about seven or eight stadia, or a Roman mile. In Solomon's time, it was twice or three times as large. After the captivity, when it was rebuilt, it occupied much the same space as before; as we may infer from Nehemiah's description of the ruins, and its condition after it was repaired. According to Josephus, the whole circumference of Jerusalem was about four miles.

LES ONZES.

XI PRIMARY PLANETS. Planets primary, called also simply, and by way of eminence, *planets*, are those which move round the sun as their proper centre. Such are the Georgian, or Georgium Sidus, Saturn, Jupiter, Vesta, Juno, Ceres, Mars, the Earth, Venus, and Mercury.

Planets secondary, are such as move round some primary planets as their respective centre, in the same manner as the primary planets do round the sun. Georgium Sidus, Saturn, Jupiter, and the Earth, are each attended with secondary planets; the Georgian with six, Jupiter with four, and Saturn with seven, called the satellites of those planets. The earth has one secondary planet, called the Moon.

The primary planets are eleven in number (including the Earth); ten of which are again distinguished into *superior* and *inferior*.

Planets *superior* are those farther from the sun than our earth is. Such are Mars, Vesta, Juno, Pallas, Ceres, Jupiter, Saturn, and the Georgium Sidus.

Planets *inferior* are those nearer the sun than our earth, and situate between the earth and the sun. Such are Venus and Mercury.

The planets are represented by characters; thus,

♄ SATURN. This planet, on account of its great distance, appears to the eye with a feeble light. It performs its revolution round the sun in about thirty years.

♃ JUPITER is a bright refulgent star, finishing its course round the sun in about twelve years.

VESTA has no character assigned to it.

⚵ JUNO.

⚴ PALLAS.

⚳ CERES.

♂ MARS is a ruddy, fiery-coloured planet, finishing its course in about two years.

⊕ The EARTH performs its revolution in one year.

VENUS is the brightest of all the planets, constantly attending the sun, and never distant from him above 48°. It finishes its course in about seven months. When it goes before the sun, it is called Phosphorus and Lucifer; and when it follows him, Hesperus.

☿ MERCURY. A little bright planet, the sun's constant companion; from whose side it never departs above 28°, and by that means is usually hid in his splendour. It performs its course in about three months.

Planets are dark, opaque, spherical bodies, like our earth.

XI PARTS of PLANTS. The anatomy of plants, or description of the different visible parts of which they are composed. These are,

1. The *epidermis,* or their cuticle, which invests the whole of the plant.
2. The *cellular* or *reticular substance,* which appears in the young shoot of a tree after the epidermis is stripped off.
3. The *liber,* inner or true bark.
4. The *alburnum,* or *blea,* improperly called the sap, a ring of imperfect wood between the liber and the true wood.
5. The *lignum,* or true wood, consisting of concentric strata or rings.
6. The *pith,* a spongy substance enclosed in a longitudinal canal, which constitutes the innermost part of the plant.
7. The *medullary productions,* or filaments proceeding from the pith, and crossing the stem in a radiate direction as far as the cellular substance.
8. The *medullary appendices,* filaments placed between the medullary productions, and reaching no farther than the wood.
9. The *trachæ,* or air-vessels.
10. The *sap-vessels.*
11. The vessels which secrete the peculiar juices of the plant.

Plants are divided into tribes, according to their similar appearances, the sameness of their habits of growth, and the general affinities which they bear to each other; viz.

The ANNUAL tribe contains all sorts of annual plants, or those only of one year's growth or duration, and generally termed "Annuals."

The BIENNIAL tribe includes all plants of two years' duration, and called simply "Biennials."

The PERENNIAL tribe comprehends all sorts of plants which are of many years' growth or duration, called merely "Perennials."

The BULBOUS-rooted tribe comprises all sorts of plants which have thick or bulbous roots; such as the onion, turnip, crocus, &c.

The TUBEROUS-rooted tribe contains all sorts of plants which have thick, knobby, fleshy roots; such as those of the anemone, potatoe, Jerusalem artichoke, &c.

The FIBROUS-rooted tribe, all sorts of plants with small, string-like, fibrous roots; such as the endive, &c.

The LIGNEOUS, or woody tribe, includes all sorts of plants of the tree or shrub kind, which have solid durable stalks; as the oak, althea, holly, &c.

The ARBORACEOUS tribe contains all sorts of plants of the tree kind, which rise with an upright main stem to a considerable height; as the ash, beech, &c.

The FRUTICOSE, or shrubby tribe, takes in all plants of shrub-like growth, rising only to a moderate height, and having a branching bushy appearance about the bottom; as the syringa, laurel, &c.

The DECIDUOUS tribe are all trees, shrubs, and plants, which cast their leaves in the winter season.

SEMPERVIRENT, or Evergreen tribe, all the trees, shrubs, and plants which have the property of retaining their green leaves the whole of the year round.

HERBACEOUS tribe; all plants which most commonly rise furnished with leaves from the roots, and with soft stalks, without any sort of woodiness; and which die at the end of the season in which they are produced; as the pea, bean, lettuce, &c.

SUCCULENT tribe includes all sorts of plants which have fleshy, moist, juicy leaves, and sometimes of considerable thickness; as house-leek, aloe, creeping cereus, &c.

LEGUMINOUS tribe embraces the different plants which have a seed-vessel, generally denominated a legume; as the pea, bean, and a variety of papilionaceous-flowered plants.

OLERACEOUS tribe, all the esculent or eatable plants for the table and culinary uses.

Pinnated tribe, all trees and plants which have pinnated leaves, or in the shape of wings; as the acacia, sumach, &c.

Enfataceous, or sword-leaved tribe, comprises the plants which have sword-shaped leaves; as the iris, sword-lily, &c.

Spathaceous tribe contains all plants producing or protruding their flowers out of a spatha or sheath; as the narcissus, jonquil, &c.

Liliaceous tribe comprehends all plants which have papilionaceous or butterfly-shaped flowers; as the pea, and all the leguminous kinds of plants.

Campanaceous tribe are all the plants which have campanulated or bell-shaped flowers; as the convolvulus, &c.

Rotaceous tribe includes all plants which have rotated or wheel-shaped flowers; as the lysimachia, &c.

Umbelliferous tribe contains such plants as produce their flowers int he form of an umbel; as in those of the angelica, parsnip, and some others.

Verticillate tribe are such plants as produce their flowers something in the form of a verticillus or whorl; as the common thyme, balm, mint, &c.

Aggregate tribe are such plants as produce flowers, consisting of numerous florets or small flowers, each having its own calyx or cup, the whole of which are collected into one close aggregate or head; as in those of the scabius, &c.

Compound, or **composite** tribe, are all those plants which have compound flowers, consisting of a great number of florets, contained in one common calyx or cup; as the sun-flower, marigold, &c.

Amentaceous tribe contains all those plants which produce their flowers in amentums; as the poplar, hazel, &c.

Baccaceous tribe comprehends all plants bearing any kind of berry, and the gooseberry, currant, yew, &c.

Coniferous tribe contains all trees and plants which bear a seed or fruit, denominated a cone; as the various firs, &c.

Fungous tribe takes in all vegetables of the mushroom kind.

GRAMINOUS tribe comprises all plants of the grass or grain kind.

LURID tribe includes all plants that have an ominous appearance, or a noxious quality about them; as the night-shade, love-apple, capsicum, digitalis, or fox-glove, &c.

NUCIFEROUS tribe are all the nut-bearing kind of plants.

POMACEOUS tribe comprehends all sorts of plants bearing a fruit of the apple-kind; as the apple, pear, almond, plum, &c.

XI TERMS used in BOTANY, to describe the STALKS of plants.

Simple stalk, one which runs up undivided from the root to the top.

Naked stalk, one that has no leaves.

Foliose stalk, one with leaves on it.

Ramose stalk, that which sends out branches.

Erect stalk, that which rises straight up.

Oblique stalk, that which is slanting.

Voluble stalk, that which twists round other things.

Flexuous stalk, that which bends.

Reclinate stalk, that which stoops towards the ground.

Procumbent stalk, that which lies on the ground.

Creeping or sarmentous stalk, that which emits roots as it runs along.

If the stalk be rounded in shape, it is called *round;* if it make two angles, *ancipital;* if three, *trigonal;* if four, *square;* if more, *polygonal.*

If the stalk be lightly ridged and furrowed on the surface, it is said to be *striated;* if more deeply, *canaliculate;* if full of protuberances, *scabrous;* if lightly hairy, *villose;* if more roughly, *hispid.*

In the *branched* stalk, if the branches rise erect, it is expressed by *ascendant;* if they spread, by *diffuse;* if they are very large, it is called *branchiated.*

If the stalk divaricate, or instead of sending out branches, it divide into them, it is called a *composite* stalk. If these divarications proceed by pairs, or if every branch be divided only into two others, it is called *dichotomous;* if it part into two series of branches, it is expressed by the term *distichous;* if it part into a multitude of ramifications, it is called *subdivided.*

All these terms are used also in expressing the different states of the *culm*, which, having no articulations, is called *equal*; when scaly, *squamose*.

Culm is a term used to distinguish that peculiar kind of stalk which is general to grasses and gramineous plants, and is not found in any others.

XI SORTS of POETRY, viz. the epigram, the epitaph, the sonnet; pastoral, didactic, satirical, descriptive, lyric, elegiac, dramatic, and epic or heroic.

XI SORTS of ADVERBS in English, viz. of number, order, place, time, quantity, manner, doubt, affirmation, negation, interrogation, and comparison.

XI SORTS of INTERJECTIONS, viz. joy, grief, wonder, aversion, attention, langour, silence, deliberation, calling, pain, taking leave.

XI POINTS or MARKS used in printing and writing. The dash (—), the parenthesis ( ), the apostrophe ('), inverted commas (" "), the caret (‸), a hyphen (-), the star (*), the double star (**), the dagger (†), the double dagger (††), and the parallel (‖).

XI HEADS under which ARMS are distinguished.

Arms of *Dominion*, are those which belong to sovereign princes and commonwealths, in right of their sovereignty.

Arms of *Patronage*, are part of the arms of those lords of whom the persons bearing them held in fee, either added to the paternal arms of the person assuming such addition, or borne as feudal arms, to show the dependence of the parties bearing them.

Arms, *Feudal*, are those annexed to dignified sees, as dukedoms, marquisates, earldoms, &c., and which arms the possessors of those sees carry, in order to show their dignities. In England, there have been but few instances of feudal bearings, but there are many in Spain and in Scotland.

Arms of *Pretension*, are those borne by sovereigns who are not in possession of the dominions to which such arms belong, but who claim or pretend to have a right to such territories: thus the kings of Spain quarter the arms of Portugal and Jerusalem.

Arms of *Concession*, are augmentations granted by the sovereign of part of his arms; thus the royal augmentation in the arms of the duke of Rutland were granted by Henry VIII.

Arms of *Community*, are those of bishoprics, cities, universities, and other bodies corporate.

Arms *Canting*, or, "Armes parlantes," punning arms, alluding to names; a trivet for Trevet, three herrings for Herring, &c. These were not common till the reign of James I.

Arms *Paternal* and *Hereditary*, are such as belong to a particular family, and which no other has a right to assume.

Arms of *Succession*, are those taken by inheriting certain fiefs or manors, either by will, entail, or duration.

Arms of *Alliance*, are such, as when an heiress marries, her issue quarter her arms, to show their maternal descent. By this means the memory of many ancient and noble families, extinct in the male line, is preserved to posterity; which is the principal reason for marshalling several coats in one shield.

Arms of *Adoption*, are those which you take of another family, quartered with your own. The last of a family may, by will, adopt a stranger to take his surname, arms, and estates, with the king's permission.

With regard to the origin of armorial ensigns, ancient authors are very much at variance; some have traced it far beyond the scope of chronology, to the Egyptians, and "the land of darkness." Diodorus Siculus asserts, that armorial distinctions were adopted by Anubus and Macedo, sons of Osiris, under the emblems of a wolf and a dog. Leaving such speculations, and passing over the numerous interesting descriptions of the Greek and Roman banners, coins, and monuments, on which armorial bearings have been displayed, we find that when the Saxons had established themselves in England, they, at the formation of the heptarchy, assigned to each province its peculiar badge.

William the Conqueror, who had been educated in the courts of Robert and Philip the First, successors of Hugh Capet, had imbibed an early taste for the martial exercises, of which France was then the most magnificent and frequented theatre. After his successful enterprise, and establishment on the throne of England, together with his desire of signalising his followers, he encouraged, but under great restrictions, the individual bearing of arms. About the year 1189, it was usual to bear a small shield fastened to a belt, upon which arms were painted: and there is proof of this custom in England prior to Richard the First, upon whose great seal the shield is charged with three lions passant.

The more general use of arms, and that which affords the best information concerning them, was the custom of engraving them on seals, for the purpose of ratifying deeds and charters. This mode is said to have been introduced by Edward the Confessor from Normandy, where he was educated, and to have been confirmed by him to the royal use. In the year 1095, being the commencement of the croisades, a period the most interesting in the history of heraldry now opens, when all Christendom united in one common and infatuated cause; when rival princes engaged in the same enterprise, not merely because sanctioned by the church, but rather as being highly delightful to the romantic and warlike genius of that age. The great council of Clermont had determined, in that year, to recover the holy city from the Saracens, by enlisting the church under the consecrated banner, from which they were to derive supernatural assistance. In the following year this immense army began their expedition, and, as a flattering badge, every private soldier wore a cross of red stuff sewed to his surcoat, from which circumstance these achievements were called "croisades." The hereditary use of arms, says Camden, was not established till the reign of Henry III. The last earls of Chester, the Quinceys, earls of Winchester, and the Lacies, earls of Lincoln, varied still the father from the son. The Veres and Berkeleys altered their paternal coats, "when they had taken up the cross," the phrase of that day for engaging in the holy wars.

The first instances of sculpture of arms upon the effigies placed on sepulchral monuments remain in the Temple Church, London, of the date 1144. The nobility and principal gentry not only continued their armorial ensigns on their shields, but, in order to be better known and distinguished, had them depicted on the breasts and backs of the tunics and surcoats which they wore over their armour, as also on the caparisons of their horses. This fashion of surcoats spread over their coats of mail, and hanging down to their heels, appears by the figure of Galfridas earl of Richmond, who died in 1186, and is so represented in that dress on his seal. This fashion continued till the commencement of the sixteenth century, since which they have been used only as the state dress of the officers of arms. From this custom we have the modern phrase of "coats of arms."

Armorial bearings upon plate were in use as early as the beginning of the thirteenth century, as appears by an inventory of the crown jewels taken in 1334.

Henry V. seems to have held a just opinion of the necessity of ascertaining those who were legally appointed to armorial distinctions, and of prohibiting an undue assumption of them: in 1419, the seventh of his reign, he issued an edict, directed to the sheriff of each county, to summon all persons bearing arms, to prove and establish their right to them. Many claims, examined in consequence of this inquiry, were referred to heralds as commissioners; but the first regular chapter held by them in a collegiate capacity was at the siege of Rouen, on the 5th of January, 1420. King Richard III., by his letters patent, dated the second of March, 1483, the first of his reign, directs the incorporation of heralds, and established the "College of Arms" on its present foundation; investing them with full powers of summoning those that assumed the arms of others, to appear in the earl-marshal's court, and of granting escutcheons to new families.

XI SORTS of MONASTIC or RELIGIOUS HOUSES formerly established in ENGLAND, viz. *cathedrals, colleges, abbeys, priories, preceptories, commanderies, hospitals, friaries, hermitages, chantries,* and *free-chapels.* These were under the direction and management of several officers. The dissolution of houses of this kind began as early as the year 1312, when the Templars were suppressed; and in 1323 their lands, churches, advowsons, and liberties, in England, were given by Edward II. to the priory and brethren of the hospital of St. John of Jerusalem. In the years 1390, 1437, 1441, 1459, 1497, 1505, 1508, and 1515, several other houses were dissolved, and their revenues settled on the colleges at Oxford and Cambridge. Cardinal Wolsey, by licence from the king and the pope, obtained a dissolution of above thirty religious houses, for founding and endowing his colleges at Oxford and Ipswich. About the same time, a bull was granted by the pope to cardinal Wolsey, to suppress monasteries, where there were not above six monks, to the value of eight hundred thousand ducats a year, for endowing Windsor and King's College, Cambridge; and two other bulls were granted to cardinals Wolsey and Campeius, where there were less than twelve monks, to annex them to the greater monasteries: a fourth bull from the same pope, to inquire about abbeys to be suppressed, in order to be made cathedrals. The opposition of the observant friars to the king's divorce from queen Catherine, and the loose and vicious habits of the monks, who were in their hearts attached to the pope's supremacy, concurring with the king's want of a large supply, and the desire of the people to save their money, brought forward a motion in parliament, to confer all religious houses upon the crown, which were not able to spend above 200*l.* a year; and an act was passed for that purpose, in the 27th year of Henry VIII. Under this act, about 380 houses were dissolved, and a revenue of upwards of 30,000*l.* a year came to the crown, besides about 100,000*l.* in plate and jewels. The suppression of these houses caused great discontent, and at length an open rebellion: when it was appeased, the king caused an act to be passed for the suppression of all monasteries; among which was included the knights of Jerusalem. These dissolutions increased the revenues of the crown above 100,000*l.* a year, besides a large sum in plate and jewels. By the last act of dissolution, in Henry's reign, which was farther enforced by Edward VI., there were suppressed 90 colleges, 110 hospitals, and 2374 chantries and free chapels. The total number of houses and places suppressed was 3182, besides those which Wolsey caused to be put down.

As the persons belonging to the greater monasteries were allowed pensions, the king did not immediately come into the full enjoyment of the whole revenues: however, by means of that which he did receive, he founded six new bishoprics, viz. Westminster (which was changed by queen Elizabeth into a deanery, with twelve prebends, and a school), Peterborough, Chester, Gloucester, Bristol, and Oxford. And in eight other sees he founded deaneries and chapters, by converting the friars and monks into deans and prebendaries, viz. Canterbury, Winchester, Durham, Worcester, Rochester, Norwich, Ely, and Carlisle. He founded also the colleges of Christ-church in Oxford, and Trinity in Cambridge, and finished King's College Chapel there. He likewise founded professorships of divinity, law, physic, and of Hebrew and Greek, in both universities. He gave the house of Grey-friars, and St. Bartholomew's hospital, to the city of London; and a perpetual pension to the poor knights of Windsor; and laid out great sums in building and fortifying many ports in the Channel.

One of the inconveniences which attended these acts of dissolution was the loss of many valuable books, which their several libraries contained: for during the dark ages, religious houses were the repositories of literature and science. They were also schools of education and learning: for every convent had one person or more appointed for this purpose; and the neighbours had the privilege of sending their children to be taught grammar and church music, without any expense. In the nunneries young females were taught to work and read; and not only people of the lower rank, but most of the noblemen and gentlemen's daughters, were instructed in those places.

XI PRINCIPAL CONSPIRATORS in the GUNPOWDER-PLOT, — Catesby, Percy, Tesmond, Garnet, Digby, Rookwood, Grant, Fawkes, I. Wright, T. Winter, and Bates. These were all the principal actors in that most horrible conspiracy, of which the following is Hume's account:

" We are now to relate an event, one of the most memorable that history has conveyed to posterity, and containing at once a singular proof of both the strength and weakness of the human mind; its widest departure from morals, and most steady attachment to religious prejudices. 'Tis of the *Gunpowder treason* of which I speak, a fact as certain as it appears incredible.

"The Roman catholics had expected great favour and indulgence on the accession of James, both as he was descended from Mary, whose life they believed to have been sacrificed to their cause, and as he himself, in his early youth, was imagined to have shown some partiality towards them, which nothing, they thought, but interest and necessity had since restrained. It is pretended, that he had even entered into positive engagements to tolerate their religion as soon as he should mount the throne of England. Whether their credulity had interpreted in this sense some obliging expressions of the king's, or that he had employed such an artifice in order to render them favourable to his title. Very soon they discovered their mistake; and were at once surprised and enraged to find James, on all occasions, express his intention of strictly executing the laws enacted against them, and of persevering in all the rigorous measures of Elizabeth. Catesby, a gentleman of good parts, and of an ancient family, first thought of a most extraordinary method of revenge; and he opened his intention to Piercy, a descendant of the illustrious house of Northumberland. In one of their conversations in regard to the distressed condition of the catholics, Piercy having broken into a sally of passion, and mentioned assassinating the king, Catesby took the opportunity of revealing to him a nobler and more extensive plan of treason, which not only included a sure execution of vengeance, but afforded some hopes of restoring the catholic religion in England. In vain, said he, would you put an end to the king's life: he has children who would succeed both to his crown and to his maxims of government. In vain would you extinguish the whole royal family: the nobility, gentry, the parliament, are all infected with the same heresy, and could raise to the throne another prince and another family, who, besides their hatred to our religion, would be animated with revenge for the tragical death of their predecessors. To serve any good purpose, we must destroy, at one blow, the king, the royal family, the lords, the commons; and bury all our enemies in one common ruin. Happily they are all assembled on the first meeting of the parliament, and afford us the opportunity of glorious and useful vengeance. Great preparations will not be necessary. A few of us, combining, may run a mine below the hall in which they meet: and choosing the very moment when the king harangues both houses, consign over to destruction these determined foes to all piety and religion. Meanwhile, we ourselves standing aloof, safe and unsuspected, shall triumph in being the instruments of divine wrath, and shall behold with pleasure those sacrilegious walls, in which were passed the edicts for proscribing our church, and butchering her children, tossed into a thousand fragments; while their impious inhabitants, meditating, perhaps, still new persecutions against us, pass from flames above to flames below, there for ever to endure the torments due to their offences.

" Piercy was charmed with this project of Catesby; and they agreed to communicate the matter to a few more, and among the rest to Thomas Winter, whom they sent over to Flanders, in quest of Fawkes, an officer in the Spanish service, with whose zeal and courage they were all thoroughly acquainted. When they enlisted any new conspirator, in order to bind him to secresy, they always, together with an oath, employed the communion, the most sacred rite of their religion. And it is remarkable that no one of these pious devotees entertained the least compunction with regard to the cruel massacre they projected of whatever was great and eminent in the nation. Some of them only were startled by the reflection, that of necessity many catholics must be present; as spectators or attendants on the king, or as having seats in the house of peers. But Tesmond, a jesuit, and Garnet, superior of that order in England, removed their scruples, and showed them how the interests of religion required that the innocent should be sacrificed with the guilty.

" All this passed in the spring and summer of the year 1604, when the conspirators also hired a house, in Piercy's name, adjoining to that in which the parliament was to assemble. Towards the end of that year they began their operations. That they might be less interrupted, and give less suspicion to the neighbourhood, they carried in store of provisions with them, and never desisted from their labour. Obstinate in their purpose, and confirmed by passion, by principle, and mutual exhortation, they little feared death in comparison of a disappointment, and having provided arms, together with the instruments of their labour, they resolved there to perish in case of a discovery. Their perseverance advanced the work, and they soon pierced the wall, though three yards in thickness ; but on approaching the other side, they were somewhat startled at hearing a noise, which they knew not how to account for. Upon inquiry, they found that it came from the vault below the house of lords; that a magazine of coals had been kept there ; and that, as the coals were selling off, the vault would be let to the highest bidder. The opportunity was immediately seized; the place hired by Piercy ; thirty-six barrels of gunpowder lodged in it; the whole covered up with faggots and billets; the doors of the cellar boldly flung open; and every body admitted, as if it contained nothing dangerous.

" Confident of success, they now began to look forward and plan the remaining part of their project. The king, the queen, prince Henry, were all expected to be present at the opening of parliament. The duke, by reason of his tender age, would be absent; and it was resolved that Piercy should seize him, or assassinate him. The princess Elizabeth, a child likewise, was kept at lord Harrington's house, at Warwickshire; and sir Everard Digby, Rookwood, Grant, being let into the conspiracy, engaged to assemble their friends, on pretence of a hunting match, and, seizing that princess, immediately to proclaim her queen. So transported were they with rage against their adversaries, and so charmed with a prospect of revenge, that they forgot all care of their own safety, and trusting to the confusion that must result from so unexpected a blow, they foresaw not that the fury of the people, now unrestrained by any authority, must have turned against them, and would probably have satiated itself by an universal massacre of the catholics.

" The day so long wished for now approached, on which the parliament was appointed to assemble. The dreadful secret, though communicated to above twenty, had been religiously kept during the space of near a year and a half. No remorse, no pity, no fear of punishment, no hope of reward, had as yet induced any one conspirator either to abandon the enterprise, or make a discovery of it. The holy fury had extinguished in their breast every other motive; and it was an indiscretion at last, proceeding chiefly from these very bigoted prejudices and partialities, which saved the nation.

"Ten days before the meeting of parliament, lord Monteagle, a catholic, son to lord Morley, received the following letter, which had been delivered to his servant by an unknown hand:—'My Lord,—Out of the love I 'bear to some of your friends, I have a care of your pre'servation. Therefore I would advise you, as you tender 'your life, to devise some excuse to shift off your attend'ance at this parliament. For God and man have con'curred to punish the wickedness of this time. And 'think not slightly of this advertisement; but retire your'self into your country, where you may expect the event 'in safety. For though there may be no appearance of 'any stir, yet I say they will receive a terrible blow this 'parliament, and yet they shall not see who hurts them. 'This counsel is not to be contemned, because it may do 'you good, and can do you no harm; for the danger is 'passed as soon as you have burned the letter. And I 'hope God will give you the grace to make good use of 'it, unto whose holy protection I commend you.'

"Monteagle knew not what to make of this letter; and though inclined to think it a foolish attempt to frighten and ridicule him, he judged it safest to carry it to lord Salisbury, secretary of state. Though Salisbury, too, was inclined to pay little attention to it, he thought proper to lay it before the king, who came to town a few days after. To the king it appeared not so light a matter; and from the serious, earnest style of the letter, he conjectured that it implied something dangerous and important. A *terrible blow*, and yet the *authors concealed;* a danger so *sudden*, and yet so *great;*—these circumstances seemed all to denote some contrivance by gunpowder; and it was thought advisable to inspect all the vaults below the houses of parliament. This care belonged to the earl of Suffolk, lord chamberlain, who purposely delayed the search till the day before the meeting of parliament. He remarked those great piles of wood and faggots which lay in the vault, under the upper house, and he cast his eye upon Fawkes, who stood in a dark corner, and passed himself for Piercy's servant. That daring and determined courage, which so much distinguished this conspirator, even among those heroes in villany, was fully painted in his countenance, and was not passed unnoticed by the chamberlain. Such a quantity of fuel, also, for the use of one who lived so little in town as Piercy, appeared a little extraordinary; and upon comparing all circumstances, it was resolved that a more thorough inspection should be made. About midnight, Sir Thomas Knevet, a justice of peace, was sent with proper attendants, and before the door of the vault finding Fawkes, who had just finished all his preparations, he immediately seized him, and turning over the faggots, discovered the gunpowder. The matches, and every thing proper for setting fire to the train, were taken in Fawkes's pocket; who, finding his guilt now apparent, and seeing no refuge but in boldness and despair, expressed the utmost regret, that he had lost the opportunity of firing the powder at once, and of sweetening his own death by that of his enemies. Before the council he displayed the same intrepid firmness, mixed even with scorn and disdain; refusing to discover his accomplices, and showing no concern, but for the failure of his enterprise. This obstinacy lasted two or three days; but being confined to the Tower, left to reflect on his guilt and danger, and the rack being shown to him, his courage, fatigued with so long an effort, and unsupported by hope or society, at last failed him; and he made a full discovery of all the conspirators.

" Catesby, Piercy, and the other criminals who were in London, though they had heard of the alarm taken at a letter sent to Monteagle; though they had heard of the chamberlain's search; yet were resolved to persist to the utmost, and never abandon their hopes of success. But, at last, hearing that Fawkes was arrested, they hurried down to Warwickshire, where Sir Everard Digby, thinking himself assured that success had attended the confederates, was already in arms, in order to seize the princess Elizabeth. She had escaped to Coventry; and they were obliged to put themselves on their defence against the country, who were raised from all quarters, and armed, by the sheriff. The conspirators, with all their attendants, never exceeded the number of eighty persons; and, being surrounded on every side, could no longer entertain hopes of either prevailing or escaping.

Having therefore confessed themselves, and received absolution, they boldly prepared for death, and resolved to sell their lives as dear as possible to the assailants. But even this miserable consolation was denied them. Some of their powder took fire, and disabled them for defence. The people rushed in upon them. Piercy and Catesby were killed by one shot. Digby, Rookwood, Wright, Bates, Winter, and others, being taken prisoners, were tried, confessed their guilt, and died, as well as Garnet, by the hands of the executioner. Notwithstanding this horrid crime, the bigoted catholics were so devoted to Garnet, that they fancied miracles to be wrought by his blood, and in Spain he was regarded as a martyr."

LES DOUZES.

XII SIMPLE SUBSTANCES. In chemistry, those substances which have not yet been decomposed or formed by art, are called *simple substances;* viz. light, caloric, oxygen, nitrogen, hydrogen, carbon, sulphur, phosphorus, iodine, boron, fluorine, and chlorine. [Metals are also generally called simple substances, though they are seldom found in a state of purity, but in combination with other metals, oxygen, sulphur, acids, &c.]

Light consists of a number of minute particles of matter, thrown off from luminous bodies, and moving with certain velocities, and having certain momenta.

Caloric is the matter of heat, and is present in all substances, either in a latent or sensible state.

Caloric may be made to exhibit itself by various methods; viz. by friction, by percussion, by electricity, by galvanism, &c.

Caloric is the cause of fluidity. For it is owing to an increase of caloric interfused through their particles, that solids, as metals, &c., become fluid; and by the abstraction of caloric, fluids are converted into solids; thus water becomes ice.

Liquids, then, are solids converted into fluids by the agency of caloric.

Oxygen is a colourless transparent element, existing pure only in a state of gas. It is a vehicle of heat, the pabulum of respiration, and forms one of the constituents of atmospheric air[*] and of water. It is the most powerful agent of decomposition known.

Nitrogen is another elementary principle, which, like oxygen, cannot be rendered perceptible to our sensations in a separate state, but exists pure only in a gaseous form. In union with oxygen, it forms peculiar acids; viz. nitric and nitrous acids. From its incapacity of supporting animal life, it has been called *azote*.

Hydrogen is the basis of inflammable airs, and one of the constituents of water.[†] It is the lightest of all ponderable substances known, being about twelve times lighter than atmospheric air. Hydrogen exists pure in a state of gas only.

Carbon is the basis of charcoal, and the principal constituent of all bituminous substances, as coal, &c. In combination with iron, it forms steel, cast iron, and plumbago; and constitutes nearly the whole of the solid particles of vegetables. When saturated with oxygen, it forms a peculiar acid, viz. carbonic acid.

Sulphur is a solid inflammable substance, found generally in the neighbourhood of volcanoes. By combustion in atmospheric air over water, it unites with oxygen, and forms sulphuric acid.

Phosphorus is a solid inflammable substance, procured principally from decomposition of phosphoric acid, in bones[‡], &c.; and when saturated with oxygen, forms phosphoric acid.

Iodine. This elementary body possesses a metallic lustre, and bluish-black colour, and is obtained from the ashes of marine plants, after the preparation of soda. It is extremely volatile; when in a state of vapour, assumes a beautiful violet tinge; and has the property of forming one acid with hydrogen, another with oxygen, and a third with chlorine.

---

[*] Atmospheric air is composed of 25 parts oxygen, 74 nitrogen, and 1 carbonic acid gas in every 100.

[†] Water is composed of 12 parts of hydrogen, and 88 of oxygen, in every 100.

[‡] Phosphate of lime.

Boron is a tasteless, inodorous body, of an olive-brown colour, obtained from a substance called borax. In union with oxygen, it forms boracic acid.

Fluorine. This simple substance has not been obtained in a separate form, though its existence is unquestionable. It is found in combination with lime, in Derbyshire spa, in ivory, the enamel of the teeth, &c. In union with other substances, it forms several acids.

Chlorine, formerly oxymuriatic acid, is a substance respecting the nature of which chemists have been much divided in opinion; some supposing it a simple elementary body; others, that it was a compound of muriatic acid with an excess of oxygen. The former opinion is now generally adopted. It is obtained by distilling muriatic acid with black oxide of manganese.

XII OF the PRINCIPAL ACIDS. The term acid is applied to substances, whether solid or liquid, which produce on the tongue a sour sensation; though some few, as the prussic acid, &c., have not that property.

An acid is in general composed of oxygen in combination with a combustible *base;* and when two or more acids have the *same* base, but contain different portions of oxygen, the name of that which contains the greater portion terminates in *ic*, as sulphuric, phosphoric; the one that contains the less portion, in *ous*, as sulphurous, phosphorous.

Acids possess the property of changing the *blue* juices of vegetables into *red;* and of combining with alkalies, earths, and metallic oxides, forming compounds called *salts.**

Sulphuric acid is procured by the combustion of sulphur over water in contact with oxygen (the water dissolving the acid as soon as it is formed), and consists of about 40 parts sulphur, and 60 oxygen, in every 100, or of one atom of sulphur and three of oxygen, and possesses all the properties of an acid in a superior degree.

Nitric acid is a compound of one atom of nitrogen and two of oxygen, and is one of the constituents of nitre. When pure, it is colourless, of a very pungent, suffocating smell, and of an extremely corrosive quality. It is capable of oxidising most of the metals, thus forming a variety of compounds. In union with muriatic acid, it forms nitro-muriatic acid, or aqua regia, the solvent of gold.

---

* Every salt in crystallising assumes its own peculiar form; thus, nitrate of potass forms *prismatic octahedrons;* sulphate of potass, *six-sided prisms;* common salt, *cubes.*

Muriatic acid is obtained from muriate of soda, by decomposition, and possesses a very sour taste, an exceedingly disagreeable smell, and constantly emits white vapours, which are highly noxious if respired. Its formation has been accounted for by two different theories; one supposing it an unknown base, in union with oxygen; the other, chlorine in union with hydrogen. The latter opinion is the one now commonly received.

Carbonic acid exists only in a gaseous form, and is a compound of one atom of carbon and two of oxygen. It is unfit for combustion, and destroys animal life if inspired. It is widely diffused through nature, being combined with chalk, limestone, gypsum, magnesia, &c., and is capable, with different bases, of forming a variety of artificial compounds, called carbonates.

Phosphoric acid is a compound of one atom of phosphorus and two of oxygen, and exists in almost all vegetable substances, particularly in all varieties of grain, and is of a very acrid taste. It is capable of uniting with various substances, forming phosphates.

Acetic acid, or pure vinegar, is a pungent, acrid fluid, obtained from exposing liquids which have undergone vinous fermentation to the atmospheric air, or from acetate of soda, acetate of copper, &c. Its chemical constituents are four atoms of carbon, three of oxygen, and three of hydrogen.

Oxalic acid exists in sorrel, gum, sugar, and all saccharine substances. It is of a very acid taste, a violent poison, and is of great service to the calico-printer and analytical chemist. It is capable of being crystallised; and in union with different bases forms *oxalates*.

Gallic acid is procured from nut-galls, oak-apples, &c., and crystallises in needle-shaped crystals. It possesses the property of precipitating iron held in solution.

Tartaric acid is a compound of hydrogen, carbon, and oxygen, and possesses an extremely acid taste. It is capable of being crystallised, and is of considerable utility in the arts and medicine. Its compounds are termed *tartarates*.

CITRIC ACID is procured from the juice of lemons, l
&c., and is of a very sharp taste. It is of various ı
in the arts, and forms, when crystallised, rhomb
prisms.

PYROLIGNEOUS ACID is procured from wood by di
tion. It is of much use in domestic purposes, h
the property of preserving meat, impregnated wit
from putrefaction for a very long period. In its
mical properties it differs nothing from acetic acid.

PRUSSIC ACID is found in laurel-leaves, peach-blos
kernels, &c., but chiefly is prepared from blood; a
dissimilar to most of the other acids, having no
taste, nor does it affect the *blue* juice of vegetables
union with iron, it forms *Prussian blue;* and is of
utility to the analytical chemist, for the purpose of de
ing metals held in solution in mineral waters, &c.

There are many other acids, such as sulphurous
boracic acid, fluoric acid, arsenic acid, malic acid, se
acid, benzoic acid, succinic acid, camphoric acid, sac
lactic acid, suberic acid.

XII TRIBES of ISRAEL, as numbered by Mos
the wilderness of Sinai.

1. Reuben.
2. Simeon.
3. Judah.
4. Issachar.
5. Ephraim.
6. Benjamin.
7. Zebulun.
8. Joseph, namely, Mana
9. Dan.
10. Asher.
11. Naphtali.
12. Gad.

XII MEN, one of each of the twelve tribes of Is
sent to search the land of Canaan.

The Lord spake unto Moses, saying, "Send t
men, that they may search the land of Canaan, whi
give unto the children of Israel: of every tribe of t
fathers shall ye send a man." And Moses, by the c
mandment of the Lord, sent them from the wildernes
Paran: all those men were heads of the children of Isr
and these were their names;

1. Shammua.
2. Shaphat.
3. Caleb.
4. Igal.
5. Oshea.
6. Palti.
7. Gaddiel.
8. Gaddi.
9. Ammiel.
10. Sethur.
11. Nahbi.
12. Geuel.

And they returned from searching of the land after forty days. They came to Moses and said, " We came unto the land whither thou sentest us, and surely it floweth with milk and honey." Numbers xiii.

XII CAKES or LOAVES, called the shew-bread, set on the golden table in the tabernacle fresh every week. There were twelve, according to the number of the tribes of Israel: these were served up hot on the sabbath-day, and were set in two rows, with pure frankincense upon each row, and the stale ones that were removed were to be eaten in the holy place by Aaron and his sons only, who were anointed priests throughout their generations everlasting.

XII APOSTLES. Ministers instructed and commissioned by our Saviour to teach the Gospel.

1. Simon Peter, the apostle who denied Christ, but afterwards repented and wept bitterly.
2. Andrew, the brother of Peter: they were both fisherman.
3. John, the beloved disciple, who leaned on Jesus's bosom at the last supper.
4. James the greater, that is, the elder; he was the brother of John: these two were fishermen.
5. Philip, who asked Christ to show him " God the Father."
6. Bartholomew, who is supposed to be the same with Nathaniel.
7. Thomas, who was hard to be persuaded that Christ was risen from the dead.
8. Matthew, the publican, who is also called Levi.
9. James, the younger or lesser, the son of Alpheus or Cleophas; he is called the Lord's brother or cousin.
10. Jude, the brother of James the lesser; he is named also Lebbeus and Thaddeus.
11. Simon, who is called Zelotes.
12. Judas Iscariot, who betrayed his Master, and afterwards hanged himself.

Matthias was chosen by lot in the room of Judas Iscariot.

XIIth DAY, or the Epiphany. The manifestation of

Christ to the Gentiles; so called as being the twelfth day exclusive from the Nativity, or Christmas-day.

XII JUDGES of ISRAEL. The judges, of whom we read after the death of Joshua, seem to have been appointed only on particular occasions, and were not "præfecti ordinarii," like Moses and Joshua; nor were they continued in their offices during life, but only as long as there was occasion for their services.

The first of these judges was OTHNIEL, who, in the year B. C. 1405, the 40th year after the peace established in the land by Joshua, gave rest to Israel. The second judge was EHUD the Benjamite, B. C. 1325: he was succeeded by DEBORAH the prophetess, B. C. 1285, who with Barak, the general of the Israelites, defeated the Canaanites under Sisera. The fourth judge was GIDION, B. C. 1245, who routed the Midianites, but declined the offer of kingly power: the fifth judge was TOLA, B. C. 1233; the sixth was JAIR, B. C. 1210; the seventh was JEPHTHAH, B. C. 1188; the eighth was IBZAN, B. C. 1182; the ninth was ELON, B. C. 1175; the tenth was ABDON, B. C. 1165; the eleventh was ELI the high priest, B. C. 1157; the twelfth and last judge was SAMUEL, B. C. 1116. The judges were succeeded by kings. (See Three Kings of Israel.)

These judges were not ordinary magistrates, but were appointed by God on extraordinary occasions, as to head the armies, deliver the people from their enemies, &c. Salian has observed, that they not only presided in courts of justice, but were also at the head of councils, the armies, and of every thing that concerned the government of the state; though they never assumed the title either of princes, governors, or the like.

Besides these superior judges, every city in the Hebrew commonwealth had its elders, who formed a court of judicature, with a power of determining lesser matters in their respective districts.

XII MEN A JURY. The mode of trial by jury, called also the trial "per pais," or "by the country," is very ancient, and seems to have been coeval with civil government in this nation. Some authors have endeavoured to trace the origin of juries up as high as the Britons themselves, the first inhabitants of our island.

It is certain, however, they were in use among the earliest Saxon colonies; their institution being ascribed to Woden himself, their great legislator and captain. Dr. Pettingal traces the use and practice of juries to the ancient Greeks and Romans, and thinks the English jury may be deduced from them.

Traces of this mode of trial in Germany have been thought to be visible in the hundred co-assessors mentioned by Tacitus, as chosen out of the Ingenui, which the lord of a territory had when he sat in judgments. Sir William Blackstone says, that this mode of trial has prevailed time out of mind, and that it was practised by all those nations which adopted the feudal system; as in Germany, France, Italy, England, &c.

XII TABLES. The laws of the twelve tables were the first set of laws of the Romans; thus called, either because they were written with a style on wooden tables covered with wax; or, rather, because they were engraved on tables or plates of copper, to be exposed in the most noted part of the public forum.

After the expulsion of the kings, as the Romans were without any fixed laws, at least, had none ample enough to take in the various cases that might fall between particular persons, it was resolved to adopt the best and wisest of the laws of the Greeks. Herodotus was appointed to translate them, and the decemviri afterwards compiled and reduced them into ten tables. They still found something wanting, which they supplied from the laws of the kings of Rome and from certain customs: all these being engraven on two other tables, made the law of the twelve tables, the source or foundation of civil or Roman law. They are also called decemviral laws.

The laws of the twelve tables have been justly charged with inexcusable severity. They were written, says Mr. Gibbon, like the statutes of Draco, in characters of blood. They approve the inhuman and unequal principle of retaliation; and the forfeit of an eye for an eye, a tooth for a tooth, and a limb for a limb, is rigorously exacted, unless the offender can redeem his freedom by a fine of three hundred pounds of copper. Besides the slighter chastisements of flagellation and servitude, very liberally distributed by the decemvirs, nine crimes of a very different complexion are adjudged worthy of death; viz. 1. Any act of treason against the state, or of correspondence with the public enemy—2. Nocturnal meetings in the city, under any pretence of pleasure, or religion, or the public good—3. The murder of a citizen—4. The malice of an incendiary—5. Judicial perjury—6. The corruption of a judge, who accepted bribes to pronounce an iniquitous sentence—7. Libels or satires—8. The nocturnal mischief of damaging or destroying a neighbour's corn—9. Magical incantations. The cruelty of the twelve tables against insolvent debtors merits peculiar notice. After the judicial proof or confession of the debt, thirty days of grace were allowed before a Roman was delivered into the power of his fellow-citizen. In this private prison, twelve ounces of rice were his daily food: he might be bound with a chain of fifteen pounds weight, and his misery was thrice exposed in the market-place, to solicit the compassion of his friends and countrymen. At the expiration of sixty days, the debt was discharged by the loss of liberty or life: the insolvent debtor was either put to death or sold in foreign slavery beyond the Tiber; but if several creditors were alike obstinate and unrelenting, they might legally dismember his body, and satiate their revenge by this horrid partition.

XII SIGNS of the ZODIAC. The zodiac, a fascia, or broad circle, whose middle is the ecliptic, and its extremes two circles parallel to it, at such distances from it as to bound or comprehend the excursions of the sun and planets.

The sun never deviates from the middle of the zodiac, i. e. from the ecliptic: the planets all do, more or less. Their greatest deviations, called latitudes, are the measure of the breadth of the zodiac; which is broader, or narrower, as the greatest latitudes of the planets is made more or less. Accordingly some make it 16, some 18, and some 26 degrees broad.

The zodiac intersecting the equator obliquely, makes an angle with it of 23 degrees and a half, or, more precisely, of 23° 29′; which is what we call *the obliquity of the zodiac*, and is the sun's greatest declination.

The zodiac is divided into twelve portions, called *signs;* and those divisions or signs are denominated from the constellations which anciently possessed each part. But the zodiac being immovable, and the stars having a motion from west to east, those constellations now no longer correspond to their proper signs; whence arises what we call the *precession of the equinoxes.*

When a star, therefore, is said to be in such a *sign of the zodiac*, it is not to be understood of that sign or constellation of the firmament, but only of that twelfth part of the zodiac, or dodecatemory of it.

Cassini has also observed a track in the heavens, within whose bounds most of the comets, though not all of them, are observed to keep; which, for this reason, he calls the *zodiac of the comets.*

The twelve signs are thus marked and named:

♈ ARIES, or the Ram, a northern constellation, and into which the sun enters about the 20th of March. The stars in this constellation, in Ptolemy's catalogue, are 18; in Tycho's, 21; in Hevelius's, 27; in the Britannic catalogue, 66: but they are most of them very small, only one being of the second magnitude, two of the third, and all the rest smaller.

♉ TAURUS, the Bull. The stars in this constellation, in Ptolemy's catalogue, are 44; in Tycho's, 43; in Hevelius's, 51; in the Britannic, 141.

♊ GEMINI, the Twins. This constellation was anciently depicted by a couple of young kids by the Egyptians; but the Greeks altered them to two children. Sir Isaac Newton thinks that these figures had some reference to the Argonautic expedition.

♋ CANCER, the Crab. The stars in this constellation Ptolemy makes 13; Tycho 15; Hevelius 29; Mr. Flamstead 83.

♌ LEO, the Lion. The stars in this constellation, in Ptolemy's catalogue, are 27, besides the informers, which are eight; in Tycho's, 30; in the Britannic, 95.

♍ VIRGO, the Virgin. The stars in this constellation, in Ptolemy's catalogue, are 32; in Tycho's, 33; in Hevelius's, 50; and in the Britannic, 110.

♎ LIBRA, the Balance, exactly opposite to Aries; so called, because when the sun is in this sign, at the autumnal equinox, the days and nights are equal. The stars in this constellation, according to Ptolemy, are 17; Tycho, 10; Hevelius, 20; Flamstead, 51.

♏ Scorpio, the Scorpion. The stars in this constellation, in Ptolemy's catalogue, are 24; in that of Tycho, 10; in that of Hevelius, 20; in that of Mr. Flamstead, 44.

♐ Sagittarius, the Archer. The stars in this constellation, in Ptolemy's catalogue, are 31; in Tycho's, 14; in Hevelius's, 22; in the Britannic, 69.

♑ Capricornus, the Goat. A southern constellation, in which the number of stars, in Ptolemy's and Tycho's catalogue, are 28; in Hevelius's, 29; in the Britannic, 51.

♒ Aquarius, the Water-bearer. The stars in this constellation, in Ptolemy's catalogue, are 45; in Tycho's, 41; in Hevelius's, 47; in the Britannic, 108.

♓ Pisces, the Fishes. The stars in this constellation, in Ptolemy's catalogue, are 38; in Tycho's, 36; in Hevelius's, 39; in the Britannic, 113.

XII MONTHS of THE YEAR. The common civil year has 365 days, and the bissextile or leap year 366; the extraordinary day called the intercalary or bissextile day. This intercalary, or additional day to every fourth year, was first appointed by Julius Cæsar, who, to make the civil year agree with the tropical ones, contrived that the six hours, which the former wanted of being equal to the latter, should, in four years, make a whole day, and be added before the 24th of February, that is, by counting the 23d twice over. The intercalary day with us is introduced by adding another day after the 28th of February, making in that month 29 days every fourth year.

January, the first month (31 days). The word is derived from Januarius, a name given to it by the Romans, from Janus, one of their divinities, to whom they attributed two faces, because on the one side the first of January looked to the new year, and on the other towards the old one.

The early Christians fasted on the first day of January, by way of opposition to the superstition of the heathens, who, in honour of Janus, observed this day with feastings, dancings, masquerades, &c.

February, the second month (28 days, except every fourth year, when an intercalary day is introduced), so called from Februa, an appellation given to Juno, in honour of whom the Romans held a great feast on the first day of this month.

MARCH, the third month (31 days). With the Romans, March was the first month; and in some ecclesiastical computations that order is still preserved; as in reckoning the number of years from the incarnation of our Saviour, which is done from the 25th of March. It was Romulus who gave the name to this month, from the name of his supposed father, Mars. The month of March was always under the protection of Minerva. The ancients held this month and May unhappy for marriage.

APRIL, the fourth month (30 days). The word is derived from Aprilis, of aperio, *I open*, because the earth in this month begins to open her bosom for the production of vegetables, &c.

MAY, the fifth month (31 days). It was called *Maius* by Romulus, in respect of the senators and nobles of the city, who were named *Majores;* as the following month was called *Junius*, in honour of the youth of Rome who served him in the war. The month of May was under the protection of Apollo.

JUNE, the sixth month (30 days). In this month is the summer solstice.

JULY, the seventh month (31 days). The word is derived from the Latin Julius, the surname of C. Cæsar, the dictator, who was born in it. Marc Antony first gave this month the name of July, which was before called Quintilis, as being the fifth month in the year of the old Roman calendar. On the third day of this month the dog-days are supposed to begin, and to end on the eleventh day of August.

AUGUST, the eighth month (31 days). This was called in the Roman calendar Sextilis; but the emperor Augustus changed the name, and gave it his own; not that it was the month in which he was born, which was September, and was first proposed for bearing his name, but because it had been fortunate to him by several victories, which he had gained in it.

This month is esteemed the richest in the whole year, because of the harvest of the several sorts of grain which is produced in it. Hence is derived the French proverb, *a man has made his August;* which means, that a man has been successful in trade, &c.

September, the ninth month (30 days). The word is derived from *septimus*, seventh. The Roman senate would have given this month the name of *Tiberius*, but their emperor opposed it. Domitian gave it his own name, *Germanicus;* the senate under Antoninus Pius gave it that of *Antoninus*. Commodus gave it his surname, *Herculeus*, and the emperor Tacitus his own name, *Tacitus*. But these appellations are all gone into disuse.

October, the tenth month (31 days). This month retains its original name, in spite of all the different names the senate and Roman emperors would have given it. The senate ordered it to be called Faustinus, in honour of Faustina, wife of Antoninus the emperor: Commodus would have had it bear the name of Invictus.

November, the eleventh month (31 days). It was the ninth in the calendar of Romulus, whence its name.

December, the twelfth month, (31 days). This was the tenth month in Romulus's year; whence the name, from *decem*, ten. The month of December was under the protection of Vesta: Romulus assigned it thirty days; Numa reduced it to twenty-nine, and Julius Cæsar increased it to thirty-one. In this month the sun enters the tropic of Capricorn, and makes the winter solstice.

XII ASTROLOGICAL HOUSES, or dodecatemories. The division of the heavens into houses is founded on this, that the stars and planets, when found therein, are supposed to have certain influences, either good or evil, upon sublunary bodies; and to each house is assigned its particular virtue or influence; upon consideration whereof astrologers draw horoscopes.

This division is made by six circles, called circles of position, which cut each other in the common intersection of the meridian and horizon, in the ordinary way of domifying, which is that of Regiomontanus: for the ancients had three other ways.

The astrological houses have their particular names according to their qualities. The first is the *house of life*, being the ascendant, and containing five degrees above the horizon, the rest beneath it; the second is the *house of riches;* the third, the *house of brothers;* the fourth, in the lowest part of heaven, the *house of relations*, and the angle of the earth; the fifth, the *house of children;* the sixth, the *house of health;* the seventh, the *house of mar-*

riage, and the angle of the west; the eighth, the *house of death*, and upper gate; the ninth, the *house of piety*; the tenth, the *house of offices*; the eleventh, the *house of friends*; and the twelfth, the *house of enemies*.

XII CLASSES of HEATHEN GODS. The heathen gods may be all reduced to the following classes:—

1. Created spirits, angels, or dæmons: whence good and evil spirits; genii, lares, lemures, typhones, guardian gods, infernal gods, &c.

2. Heavenly bodies; as the sun, moon, and other planets; also the fixed stars, constellations, &c.

3. Elements; as air, earth, ocean, Ops, Vesta, the rivers, fountains, &c.

4. Meteors. Thus the Persians adored the wind: thunder and lightning were honoured with the name of Geryon; and several nations of India and America have made themselves gods of the same. Castor, Pollux, Helena, and Iris, have also been preferred from meteors to be gods; and the like has been practised in regard to comets: witness that which appeared at the murder of Cæsar. Socrates deified the clouds, if we may give credit to Aristophanes; and the primitive Christians, Tertullian assures us, were reproached with the same thing.

5. They erected minerals or fossils into deities. Such was the Bælylus. The Finlanders adored stones; the Scythians, iron; and many nations silver and gold.

6. Plants have been made gods. Thus leeks and onions were deities in Egypt; the Sclavi, Lithuanians, Celtæ, Vandals, and Peruvians adored trees and forests; the ancient Gauls, Britons, and Druids paid a particular devotion to the oak; and it was no other than wheat, corn, seed, &c. that the ancients adored under the names of Ceres and Proserpina.

7. They took themselves gods from among the waters. The Syrians and Egyptians adored fishes; and the tritons, nereids, sirens, &c., what were they but fishes? Several nations have adored serpents; particularly the Egyptians, Lithuanians, Samogitians, &c.

8. Insects, as flies and ants, had their priests and votaries: these among the Thessalians, and those in Acarnania, where bullocks were offered to them.

9. Among birds, the stork, raven, the sparhawk, ibis, eagle, grisson, and lapwing, have had divine honours; the last in Mexico, the rest in Egypt and at Thebes.

10. Four-footed beasts have had their altars; as the bull, dog, cat, wolf, baboon, lion, and crocodile, in Egypt and elsewhere; the hog in the island of Crete; rats and mice in the Troas and at Tenedos; weasels at Thebes; and the porcupine throughout all Zoroaster's school.

11. Nothing was more common than to place men among the number of deities; and from Belus, or Baal, to the Roman emperors before Constantine, the instances of this kind are innumerable; frequently they did not wait so long as their deaths for the apotheosis. Nebuchadnezzar procured his statue to be worshipped while living; and Virgil shows that Augustus had altars and sacrifices offered to him. We learn from other hands, that he had priests called *Augustales*, and temples at Lyons, Narbona, and several other places; and he must be allowed the first of the Romans in whose behalf idolatry was carried to such a pitch. The Ethiopians deemed all their kings gods; the Velleda of the Germans, the Janus of the Hungarians, and the Thaut, Woden, and Assa of the northern nations, were, indisputably, men.

12. Not men only, but every thing that relates to man, has also been deified; as labour, rest, sleep, youth, age, death, virtues, vices, occasion, time, place, numbers. Infancy alone had a cloud of deities; as Vegetanus, Levana, Rumina, Edufa, Potina, Cuba, Cumina, Carna, Ossilago, Statulinus, Fabulinus, &c.

They also adored the gods health, fever, fear, love, pain, indignation, shame, impudence, opinion, renown, prudence, science, art, fidelity, felicity, calumny, liberty, money, war, peace, victory, triumph, &c.

It is difficult to discover the real sentiments of the heathens with respect to their gods; they are exceedingly intricate and confused, and even frequently contradictory. They admitted so many superior and inferior gods who shared the empire, that all was full of gods. Varro reckons up no less than 30,000 adored within a small extent of ground, and yet their number was every day increasing. The way to heaven was so easy for the great men of those days, that Juvenal brings in Atlas, complaining that he was ready to sink under the load of such a number of new gods as were daily placed in the heavens: yet father Mourgues seems to have proved that all the philosophers of antiquity have acknowledged that there was but one God.

XII LABOURS of HERCULES. Hercules was a celebrated hero of antiquity, who, on account of his singular exploits, was deified by the Pagans. Herodotus fixes his birth a hundred years before the taking of Troy by the Greeks, or about the year 1282 before the commencement of the Christian era. According to Blair's Tables, he died 1222 B. C.

His most renowned adventures may be divided into three classes: to the first class we may refer his strangling the two serpents which were sent to destroy him in his cradle, and his killing a large lion near his native city Thebes.

The second class comprehends those exploits which have been commonly called his twelve labours: these he undertook by order of Eurystheus. The first of these was his engagement with the Cleonæan lion in the forest of Nemea; the second, his conquest of the Hydra, by which he is said to have cleared the fens of Lerna, near Argos, of the serpents which infested them, and which seemed to multiply as fast as they were destroyed; the third, the destruction of the Erymanthian boar; the fourth, his killing a wild stag; the fifth, his shooting the birds called stymphalides; the sixth, his cleansing Augeas's stables. Fabulous history reports that Augias, or Augeas, a king of Elis, had a stable which contained a great number of cattle, as some say, 3000 oxen, and which had not been cleaned for thirty years, so that the exhalations which proceeded from it infested the country; and to cleanse it was considered as a work surpassing human effort. Hercules undertook the labour, and engaged to perform it in one day, on condition that Augias would give him a tenth part of the cattle. This work Hercules is said to have accomplished by making the river Alpheus to pass through the stable. Augias withheld the promised recompense; upon which Hercules slew him, and placed his son Phileus upon the throne, because he advised his father to fulfil his promise. The seventh and eighth were his destroying the Cretan bull, and Diomed, the barbarous tyrant of Thrace, with his horses; the ninth, his combat with Geryon, who is generally represented with three bodies; the tenth, his conquest of the Amazon; the eleventh, his dragging Cerberus up from the infernal regions; and the last, his killing the serpent, and gaining the golden fruit in the garden of the Hesperides.

The third class of Hercules's exploits were those which he voluntarily undertook; the chief of which are his combat with the giant Antæus, whereby he freed Africa from this destroyer; and his killing Cacus, the notorious robber of Italy.

These exploits and adventures have been described in various ways by many ancient and modern poets, painters, and sculptors. The Infant Hercules of Sir Joshua Reynolds is one of his most esteemed works.

XII OF THE MOST CELEBRATED ENGLISH PAINTERS, arranged according to the dates of their BIRTH.

1. Sir James Thornhill, was born in Dorsetshire in 1676, and died in 1732. His forte lay in historical and allegorical compositions; he possessed a fertile and fine invention, and sketched his thoughts with great ease, freedom, and spirit. His principal works are the paintings in the dome of St. Paul's, Greenwich Hospital, and Hampton Court. He was appointed state painter in the reign of Queen Anne, from whom he received the honour of knighthood.

2. William Hogarth, was born in 1698, and died at the age of 66. This original genius was a native of London: he was apprenticed to a silversmith in Cranbourn-street, Leicester-fields, as an engraver of arms. The first piece in which he distinguished himself as a painter was a representation of the Wanstead Assembly. It was Hogarth's custom to sketch on the spot any remarkable face that struck him, and this he frequently did with his pencil upon his finger nail. In 1730, he married the only daughter of Sir James Thornhill. Hogarth went to France, and was taken into custody at Calais, while he was sketching the gate of that town, a circumstance he has recorded in his picture entitled, "Oh the Roast Beef of Old England." He was taken before the governor as a spy, and after a very strict examination was committed a prisoner to Gransire, his landlord, on his promising that the painter should not go out of his house till he was to

embark for England. His Marriage-à-la-Mode, and his Industrious and Idle Apprentices, are esteemed not only fine works of art, but excellent moral essays.

3. **Richard Wilson** (called the English Claude) was a native of Wales; born in 1714, and died at the age of 68. Zuccarelli induced Wilson to abandon portrait-painting, and follow the study of landscape only; and Vernet, who met him at Rome, introduced him to notice. It is said of him that he possessed such versatility of power as to be one minute an eagle sweeping the heavens, and the next a wren twittering a simple note in the humble thorn. He was a member of the Royal Academy.

4. **Sir Joshua Reynolds** stands most deservedly at the head of the English school of painting. He was the son of the Rev. Samuel Reynolds, and was born at Plympton in Devonshire, July 16, 1723, the tenth of eleven children. He was taken by captain (afterwards lord) Keppel to Italy, where he stayed three years studying the works of the old masters. On his return, he hired a large house in Newport-street; and the first specimen he gave of his abilities is said to have been a Bey's Head in a Turban, richly painted in the style of Rembrandt; this, and a portrait of admiral Keppel, at once placed him at the head of his profession as a portrait-painter. He was not less distinguished as a writer: his lectures on painting delivered at the Royal Academy are said to be equal in composition to any thing in the English language. He was the first president of the Royal Academy. Sir Joshua died on the evening of the 23d Feb. 1792.

5. **Gainsborough** was a native of Sudbury, born 1727, and died at the age of 61. Nature was his teacher, and the woods of Suffolk his school. He quitted Sudbury, and commenced portrait-painter in London: in both branches of the art he excelled. He was a member of the Royal Academy.

6. **Joseph Wright**, of Derby, born 1734, died 1797, was a scholar of Hudson. In 1782, he was elected an associate of the Royal Academy; but, offended at the preference given to another at a subsequent election of academicians, he resigned his diploma. As a portrait-painter, Wright can claim little notice; to faces of infancy he often gave a bloom of uncommon beauty. But

the branch of art which he cultivated with most success were night-pieces, in the manner of Schalken, though on the scale of Gherardo dalle Notti.

7. George Romney was born at Dalton in Lancashire in 1734, and died 1802. For a considerable time he engrossed much public attention in the metropolis as a portrait-painter. He went to Paris in 1764, and afterwards to Italy with Ozias Humphrey, one of the most eminent miniature painters of his time. His residence at Rome was distinguished by assiduous and solitary study. It was said of Romney, that "if he had not genius to lead, he had too much originality to follow; and, whenever he chose, was nearer to the first than the last of his competitors." Those who wish to form an idea of his historic powers may consult the pictures of the Storm from the Tempest, the Cassandra from Troilus and Cressida, and the infant Shakspeare in the Boydell Gallery. Romney, as an artist and a man, is entitled to commendation and esteem; but his life furnishes a signal proof of the futility of the idea, that genius is a passive quality, and may be laid by or taken up as a man pleases.

8. James Barry was the son of a victualler at Cork: he was born 1740, and died 1806. Some assert that he had a liberal education; but all agree that for the rudiments of art he was beholden only to himself. The great Edmund Burke, his patron, sent him to London, and afterwards to Italy. In 1777, his offer to decorate the room of the Society of Arts was accepted, and he performed the task in about three years, without any assistance. The Society voted him a gold medal and 200 guineas, and ordered the pictures to be exhibited during two seasons for the painter's benefit, which produced him 700*l.* clear. On matters of art and taste, Barry is known as a writer. He was a Royal Academician.

9. John Hamilton Mortimer, born 1741, died 1779; a native of Sussex. He learned to paint under Hudson, and to draw at the duke of Richmond's gallery. He painted at a very early period a large picture of the Conversion of the Britons by St. Paul, which is now placed in the church at Chipping Wycombe. His knowledge of anatomy was said to be so perfect, that with a common pen and ink he could draw with great exactness and rapidity the human skeleton in any attitude. He died in

the vigour of life, and left behind him a well-deserved reputation.

10. **John Opie**, born in 1761, died in 1807, was the son of a village carpenter in Cornwall, and for some time, through necessity, pursued his father's trade. He had given early proofs of his genius for painting, and was at length discovered by George Walcott, known since by the name of Peter Pindar, then resident at Truro, who brought him to London. Here he soon became the prodigy of the day, and employment pressed upon him. He was Professor of Painting to the Royal Academy.

11. **Benjamin West**, born of English parents at Philadelphia, in North America, where his genius for painting was early manifest.

He was sent to Italy, under the patronage of the Penn family, in 1763, and from thence to England.

In 1765, he produced two historical pictures which displayed talents not common; the subjects were Angelica and Medona, and Cymon and Iphigenia. He soon after produced his Death of General Wolfe.

Mr. West distinguished himself afterwards as an historical painter, was patronised by King George III., and filled with great honour to himself, and benefit to the members, the presidency chair at the Royal Academy. He died on the 10th of March, 1820; aged 82.

12. **George Morland** was the son of Henry Robert Morland, an obscure painter, from whom he received his first instructions, but very soon surpassed his master. He was born in 1764, and died in 1804. His forte lay in painting animals of the domestic kind; horses, dogs, pigs, &c.

XII OF THE MOST CELEBRATED PAINTERS denominated OLD MASTERS.

1. **Leonardo da Vinci**, descended from a noble family; he was born at Florence 1445, and died in 1520. "No artist before his time ever had such comprehensive talents, or so discerning a judgment." As a painter, in some respects, he never was equalled; in music and architecture he was also highly gifted. His masterpiece is that incomparable picture the Last Supper, in the church of the Dominicans at Milan.

2. **Michael Angelo Buonarruotti**, the great restorer of epic design, died 1564, aged 90, was of a genius beyond rivalship in whatever he undertook: it is difficult to fix his principal sphere, whether painting or sculpture. His first great work was the design so much celebrated under the name of the Cartoons of Pisa, began in competition with Leonardo da Vinci, for the palace of Florence.

Julio II. employed him to paint the chapel of Sextus IV. Leo X., Adrian VI., and Clement VII. employed him as a sculptor; and to finish the church of St. Peter's at Rome he was employed as an architect.

3. **Titian.** This illustrious painter was born at Friuli, a province subject to the Venetians, in 1480; but at ten years of age he was conducted to Venice, and placed with Giovanni Bellini.

The excellence of Titian was not so apparent in historical compositions as in portraits and landscapes: these seem to be superior to all competition, and many of them to this day preserve their original beauty.

4. **Raffaello Sanzio** (called Raffael) was born at Urbino in 1483. His first master was Perugino; but he afterwards went to Florence to study the works of Michael Angelo and Leonardo da Vinci. Of his works it will only be necessary to mention the Cartoons at Hampton Court, which have been for many years the glory of England, and the envy of all other polite nations. He died on the same day of the year on which he was born,—Good-Friday, 1520, at the age of 37. Mr. Fuseli has placed him at the head of his art.

5. **Sebastian del Piombo** was born at Venice in 1485, and died in 1547. His first attempts were in portrait-painting, and he arrived at the utmost perfection in that branch of the art. He also distinguished himself equally in history, and was allowed to have a fine taste in designing. His reputation was very much advanced by Michael Angelo; that artist favoured him on all occasions, and was zealously active in his praise and commendation; and as Raffael had painted the celebrated picture of the Transfiguration, which was placed as an altar-piece in the church of St. Pietro, in Montorio, Michael Angelo advised Sebastian to paint a grand com-

position of the raising of Lazarus, to stand in competition with the picture of Raffael. It was affirmed that, either to set the merit of Piombo in the strongest light, or out of some degree of envy at the incontestable merit of Raffael, Buonarruotti promoted the undertaking, and it was said even gave the design.

When the work was finished, the abilities of Sebastian were confessed by the ablest connoisseurs; and although the wonderful composition of the Transfiguration was accounted inimitable, the work of Piombo was universally admired; and after the death of Raffael, he was considered the best artist in Italy. This admirable picture is now to be seen in the Angerstein collection in Pall Mall.

6. **Correggio** was born in 1494, according to conjecture, for nothing certain is known of his parentage.

He was one of the four great luminaries of the art at its supreme establishment in the 16th century. His most celebrated pictures are the Magdalen Reading, Christ Praying in the Garden, the Madonna della Scudella, and the Descent from the Cross.

7. **Parmigiano** was born at Parma, 1503. The chief model of his imitation was Correggio, from whose works, with those of Michael Angelo, Raffael, and Giulio, he formed that peculiar style for which he is celebrated. One of his finest works is the Dream of St. Jerome, now at the British Gallery in Pall Mall.

8. **Paolo Veronese**, the great master of what is called the ornamental style, was born at Verona in 1530, and died in 1588. He went at an early age to Rome, where from the frescoes of Michael Angelo and Raffael he acquired the idea of that breadth of style which distinguishes him in all his allegorical and mythological pictures.

9. **Annibale Caracci**, born at Bologna in 1560, died in 1609, was a disciple of Ludovico Caracci, his cousin-german, from whom he not only imbibed the best principles of painting, but also an ambition to arrive at the utmost perfection in every branch of the art, and for this purpose he studied the works of Titian, Tintoretto, and Paolo Veronese, at Venice, and those of Correggio at Parma. His genius was better adapted to paint poetical and profane subjects than sacred; though, when he attempted the latter, he generally succeeded. His land-

scapes are highly esteemed, and indeed all his works are very generally approved.

10. **Claude Lorraine** was born at Lorraine in 1600, and died in 1682: he was apprenticed to a pastry-cook. In the early part of his life he showed no symptoms of that astonishing genius which in more advanced years shone out in his works. He was very little indebted to any master for instruction, except Agostino Tassi, who taught him some of the rules of perspective. As a landscape painter, Claude stands unrivalled, nor has one artist in that branch of painting approached to anything like his excellence, if we except our distinguished countryman Wilson. (The finest collection of Chaude's pictures is to be seen at the Angerstein Gallery.)

11. **Rembrandt** was born at a village near Leyden in 1606, and died in 1674. His style of painting in his first years was very different to that of his latter time; for his early performances were highly finished; but he afterwards assumed a style of colouring and handling as opposite as possible, strong, bold, and with a degree of force that astonishes, in which he has not been excelled.

His portraits are excellent, but of a heavy kind. His local colours are extremely good; he perfectly understood the principles of chiaro-scuro, and every tint is in its proper place.

Rembrandt's pictures bring incredible prices when they can be met with, which is very seldom. (Of this artist's works, too, some fine specimens may be seen in the Angerstein Gallery.)

12. **Salvator Rosa.** This admirable painter was born at Naples in 1614, and died at the age of 59 years. The style in which he painted was formed by his own elevated genius. A grandeur of thought pervades his compositions, and his effects are sublime.

XII CÆSARS. The title of Cæsar with the Romans took its rise from the cognomen or surname of the dictator Caius Julius Cæsar; which, by a decree of the senate, all the emperors were to bear. Under his successor Augustus, the first emperor, the appellation Augustus was appropriated to the emperors, in compliment to that prince; and the title Cæsar was given to the second person in the empire, though it still continued also to be given to the first: hence the difference between Cæsar used simply, and Cæsar with the addition of Imperator Augustus.

1. Caius Julius Cæsar, the dictator of Rome, and founder of its imperial constitution, was a descendant of the Julian family, which boasted its derivation from Venus. From the tenth year of the second Punic war, A. U. C. 546, till the time of Caius Julius Cæsar, the family enjoyed public offices in the commonwealth. The father of Cæsar died suddenly in early life, after having occupied the station of prætor: his mother's name was Aurelia, and his aunt Julia was the wife of the celebrated Caius Marius. He was born at Rome, on the 12th day of the month Quintilus, afterwards called July, A. U. C. 654, B. C. 100; and though he lost his father in his sixteenth year, his connexions were such as to favour his introduction into life in a manner suitable to his talents. In his youth he was betrothed to Cossutia, a rich heiress; but in his seventeenth year he broke this engagement, and married Cornelia, the daughter of L. Cornelius Cinna; and at this time he was invested with the dignity of *flamen dialis*.* He was afterwards deprived of his priestly office, and subjected to a decree of proscription; which decree was afterwards reversed by the intercession of the vestal virgins.

Cæsar having passed through the subordinate offices of the state, the next object of his ambition was the consulate. In order to the attainment of this dignity, it was necessary for him to connect himself with one of the two parties that divided the power of the state; that of Pompey, or that of Crassus. In this dilemma he determined on reconciling the two rivals; and accordingly proposed a triumvirate, in which the whole power of the state should be lodged: and this was the first triumvirate established in Rome. By this artful expedient, Cæsar, by means of Pompey and Crassus, secured his election to the consulship, sixty years B. C. Cato alone foresaw the consequences of this alliance, and opposed the election, exclaiming, that Rome had lost her liberty; but his opinion was disregarded till it was too late to follow his prudent counsel. Having thus established his interest at Rome, he hastened to Gaul, which province was the scene of such military exploits and conquests as effaced the remembrance of Pompey's victories in the East; and the enormous sums he acquired, chiefly by plundering the temples of their treasures, increased the number of his friends in Italy. The signal successes of this bloody campaign were honoured with a public thanksgiving at Rome, which lasted fifteen days; and Pompey became jealous of a renown which seemed likely to eclipse his own. In the year B. C. 55, Cæsar renewed his military operations in Gaul, and having repressed some German tribes, which had crossed the Rhine with a design of settling in Belgium, and having laid waste the country of Sicambri, and spread alarm throughout the parts adjacent, he resolved to pass over to Britain, and punish its inhabitants for furnishing the Gauls with continual supplies against the Romans. Accordingly he fitted out a fleet, crossed the Channel, and dispersed the natives who opposed his landing. This expedition, however, was merely preparatory to that of the following year; in which he collected 800 vessels, and embarked with five legions and 2000 horse, which landed without opposition on the Kentish coast, at the place of his former descent. His progress was for some time interrupted by a storm, which damaged his fleet, and required his drawing his forces towards the sea-coast. But having repaired his shattered ships, and properly secured them, he put his troops again in motion, and advanced, notwithstanding the opposition with which he had to encounter, as far as Cowey, near Walton, where he crossed the Thames, although the enemy occupied the opposite bank, and had driven sharp stakes in the only part of the river that was fordable. The Britons fled in consternation; and Cassivelaunus, finding all his efforts of resistance ineffectual, submitted to Cæsar, who condescended to give him peace, after having exacted a great number of hostages, and imposed a certain tribute to be paid annually to the Roman people. Having thus settled the affairs of Britain, he marched back to the sea-side, where he embarked his troops and hostages, and arrived in safety at the continent. On his return to Gaul, he found the country grievously distressed by a famine, which obliged him to disperse his troops into different quarters for their more commodious subsistence.

---

* Priest or minister of sacrifice to Jupiter.

The natives took this occasion of attacking them in their winter stations; but Cæsar, by his singular activity, quelled the insurrection, and, after the most difficult and glorious campaign of any he had made in Gaul, passed the winter in this country.

The death of Julia, during Cæsar's expedition into Britain, dissolved the alliance between him and Pompey, and hastened the revolution which was now approaching. Pompey, however, was not thoroughly apprised of Cæsar's designs, and sent him two legions in order to recruit the losses which he had sustained. The war in Gaul lasted till the year B. C. 51, and it has been computed that during his several campaigns there, Cæsar took 800 cities or towns, subdued 300 nations, and destroyed by the sword a million of men. The crisis of the Roman state was now speedily approaching. The power of Pompey was supreme in the senate; and as Crassus was dead, and his interest was altogether detached from that of Cæsar, he adopted various measures for mortifying his rival. The enemies of Cæsar were advanced to the chief offices of the state; the legions that had been sent to him were withdrawn; and his request of continuing longer in his government was rejected. Cæsar, however, possessed the affections of the people, and to him the best troops of the state were zealously attached. With a moderation, therefore, real or affected, from which no danger could ensue, he proposed to disband his army if Pompey would adopt the same measure. But Pompey, being less feared by the constitutional party than Cæsar, was supported by it in his refusal to acquiesce in any terms of accommodation. The former was continued in his government of Spain, whilst the like indulgence was refused to the latter, who, having marched with a single legion across the Alps to Ravenna, in order to wait the event, was informed that the senate had issued a decree announcing him an enemy of the republic if he did not give up his command within a limited time. Three tribunes in Cæsar's interest, who had protested against this decree, were driven with violence out of the senate-house, and had fled to Cæsar's camp in the disguise of slaves, where their presence inflamed the minds of the soldiers. In the mean time the fatal decree was issued at Rome, which required the consuls, the pro-consul Pompey, and the consular magistrates to provide for the public safety; which, in effect, was a declaration of war. It was in the year B. C. 50 that these important events took place, and that the civil war was commenced. Two powerful parties were now taking up arms; both pretended to have nothing in view but the defence of their common laws and liberty; whilst their chiefs aimed only at establishing their own power on the ruins of that liberty which they affected to defend. Pompey's party had on their side the forms of the constitution; he was acknowledged as the general of the commonwealth, and the whole senate, with the consuls, followed his ensigns. On the other hand, Cæsar seemed to have the more equitable cause, and the people, with their tribunes, took part with him. The poet Lucan, who was of Pompey's party, without absolutely deciding the question between these two rivals, seems to give the advantage to Cæsar, when he says, that Cæsar could not bear a superior, nor Pompey an equal.

Cæsar, as soon as he received the hostile decree, confiding in the attachment of his soldiers, resolved to begin the war. Accordingly, he marched to the Rubicon, a small stream that separated Cisalpine Gaul from Italy. On the banks of this river he for some time paused and deliberated; but at length, crying out "The die is cast," threw himself into the stream. Having passed this river, he became the avowed foe of his country; and therefore "the passage of the Rubicon" has been proverbially used to signify a desperate decision. Pompey withdrew on the rapid approach of Cæsar's army, which, with Cæsar at its head, advanced to Rome. On his approach to the city, he sent a message to the senators then in Italy, requesting their counsel in the Capitol, and quartered his troops in the neighbouring municipia. To the assembled senators he gave an account of his conduct, and avowed a moderation and desire of compromising all differences; whilst the people crowded to see the famous conqueror of Gaul, and to congratulate him on his return, after an absence of ten years.

To meet the expenses of the army, he went to the temple of Saturn, and seized the public treasure. The war was now prosecuted with vigour. Cæsar himself undertook the campaign of Spain, and soon subjugated the whole country; and on his return to Rome the prætor Lepidus nominated him dictator by his own authority. Having exercised this dignity with moderation, he changed it for that of consul. He then pursued Pompey into Greece; but the destruction of the greatest part of his fleet by the stronger squadron of Pompey induced him to propose terms of accommodation, which were disregarded. Anxious to effect a junction with that division of the army which was commanded by Antony, he made an attempt, the temerity of which has incurred censure. Disguised like a slave, he embarked on board a fisherman's bark, for the purpose of crossing over into Italy; the vessel, however, after struggling with contrary winds, was obliged to return, notwithstanding the earnestness with which Cæsar urged the crew to risk the dangers of the voyage. It was on this occasion that he is said to have discovered himself to the terrified master, and to bid him dismiss his fears, as "he carried Cæsar and his fortune."

Having accomplished his design, he followed Pompey to Dyrrachium, and invested his camp. Pompey, reduced to the want of forage, and disdaining to be cooped up in such a nook of land by his enemy, determined to break through the barrier, and at length succeeded. Cæsar, mortified at his escape, retired to Macedonia, whither Pompey followed him; and on the plains of Pharsalia the great contest between these two commanders was decided, B.C. 48. The army of Pompey was totally routed, and Cæsar equally distinguished himself by his valour and his clemency after the victory. Pursuing the advantage he had thus gained, he left the plains of Pharsalia on the third day after the battle, and with his cavalry pursued Pompey. Crossing into Asia, and receiving on his passage the submission of a superior fleet of Pompey, which he fell in with, he hastened to Rhodes, and embarked for Egypt.

At Alexandria he was informed of Pompey's murder; and the head of his rival, wrapped up in a veil, was presented to him, as a token of his final success. He turned his eyes from viewing the bloody spectacle, and reflecting on the fate of this eminent personage, once his friend and kinsman, shed tears on the occasion; and dismissing the messenger with expressions of displeasure, ordered the head to be buried with due solemnity.

When the news of Pompey's death reached Rome, the senate and people concurred in accumulating honours and prerogatives on Cæsar, the only surviving master of the empire. He was proclaimed consul for five years, made tribune of the people, and created dictator for a whole year. He defeated Pharnaces in Asia, whom he pursued with a celerity emphatically expressed in a laconic epistle to a friend, "Veni, vidi, vici," *I came, I saw, I conquered.*

The dictatorship was established for life, and the title of "Imperator," as head of the empire, and denoting the highest monarchical rank, was conferred upon him, and from him it was transmitted through his successors. Notwithstanding these accessions of rank and honour, Cæsar retained the affable manners of first citizen of the republic, and studied to ingratiate himself with the nobles and the people. He pleased the latter by dismissing his guards, restoring the statues of their former favourite Pompey, and by treating them with shows and largesses; and he secured the attachment of the nobles by the multiplication of offices of dignity and profit. However, he offended the senators by increasing their number from 300 to 900, and by admitting several persons of low origin to this honourable class. The Romans, who entertained an inveterate prejudice against the name of *king*, were further offended by Antony's offering to Cæsar a royal diadem; for though he refused the gift, he was suspected of being privy to the design. This and other circumstances contributed to excite envy and jealousy in the minds of several of the first men of Rome, and produced a conspiracy against Cæsar's life. Cæsar himself was warned of it by his friends; intimations had been circulated for some time of the persons concerned in it, and of the time of its execution; and so fully possessed of the reality of the danger was Calpurnia, Cæsar's wife, that she earnestly urged him not to quit his house on the ides of March, the time appointed for the meeting of the senate. In compliance with her entreaties, he determined to stay at home. But Decimus Brutus representing to him the importance of the matters which were to be proposed in the senate, diverted his purpose, and they set out together. In their way thither, a person named Artimedorus put into Cæsar's hand a paper containing a discovery of the whole plot; but though he was desired to read it, he was prevented by the crowd which surrounded him. On his arrival in the hall of the senate, a number of the conspirators beset him, under the pretext of uniting their supplications with those of Metellus Cimber, on behalf of his banished brother; at this instant, Cimber gave the signal by taking hold of his robe, and pulling it from shoulders, upon which Casca stabbed him in the neck. The enraged Cassius wounded him deeply in the head, and many others concurred in stabbing him on all sides. Till Brutus appeared, he is said to have resisted his assassins; but upon the sight of the dagger aimed at him by Brutus, he exclaimed, "What! my son Brutus too!" and, covering his face with his robe, fell, pierced with twenty-three wounds, at the pedestal of Pompey's statue. Such was the catastrophe that terminated Cæsar's career, in the 56th year of his age, March 15th, A. U .C. 710, B. C. 44. His death was amply revenged, and his memory was honoured among the tutelary deities of his country. As he left no direct lineage, his adopted heir was the grandson of his sister Julia.

2. Augustus, the successor of Julius Cæsar, was originally called Caius Octavius: he was the son of a senator of the same name, who had been prætor of Macedon, and of Accia, daughter to Julia, the sister of Julius Cæsar: he was born during the consulate of Cicero and Caius Antonius, in the year of Rome 691, B. C. 63.

The reign of Augustus was rendered memorable by the reformation of the calendar, and illustrious by the birth of our Saviour.

Augustus died on the 19th of August, A. D. 14, A. U. C. 767: his surname was continued to his successors.

3. Tiberius was the adopted son and successor of Augustus. He was born in the year B. C. 42. He died in the seventy-eighth year of his age, and the twenty-third of his reign, universally execrated; and his predominant vices were such that they have almost effaced the records of his laudable qualities. His death was a violent one, he having been suffocated in his bed with the pillows.

4. Caligula (Caius Cæsar) was the son of Germanicus and Agrippina, born A. U. C. 765, A. D. 12, and derived

his surname from "caliga," a kind of military boot, which he wore, in conformity to those of the common soldiers, and with a view of engaging their affections. The disposition of this emperor was ferocious and cruel; but some of his acts can only be attributed to insanity. Such was his pretended expedition against Britain. He marched his whole army to the coast opposite to the island, and having advanced in a magnificent galley to a small distance from the shore, he suddenly returned, and ordered a signal of battle to be given; after which the soldiers, who were astonished at this farce, were directed to fill their helmets with cockle-shells, and the whole ended in a trifling donative to the victorious troops. This folly was succeeded by a very serious design of cruelty, that of decimating all the legions of the German army; but in this and many other wicked designs he was cut short by assassination. The people's hatred of the tyrant manifested itself immediately after his death. His statues were demolished, his acts abrogated, and his memory as much as possible extinguished. After a reign of three years and ten months, A.D. 41, Caligula perished, and left behind him a character universally detested.

5. Claudius was born at Lyons in Gaul, about ten years before the birth of Christ. He was the son of Nero Claudius Drusus and Antonia, descended on his father's side from Livia, the wife of Augustus, and on that of his mother from M. Antony and Octavia, the sister of Augustus; he was also a nephew of Tiberius, the brother of Germanicus, and the uncle of his predecessor, the emperor Caligula.

Claudius was an imbecile and timid man; he was twice married, and was successively the tool of base and designing women: the first, Messalina, he caused to be put to death; and the second, Agrippina, who was his niece as well as his wife, administered poison to him in a favourite luxury of his taste. This happened A. D. 54, in the 64th year of his age, after having worn the imperial purple fourteen years.

6. Nero, the son of Cneius Domitius Ahenobarbus, and Agrippina, the daughter of Germanicus, was born in the 37th year of the Christian era. Both his parents were notorious for the profligacy of their lives, and of this his father was so conscious, that he affirmed at the birth of his

son, that, springing from such a stock, he must be a monster born for some public calamity. The favour of the people was manifested to him at his first appearance at the secular games given by the emperor Claudius in the year 47. This emperor having married Agrippina, adopted Nero, then only in his thirteenth year, as his successor, though he had a son of his own.

The first act of murder of this depraved prince was the poisoning of Britannicus: he next made an attempt on the life of his mother. The levity and turbulence of his disposition were displayed in the amusements which he followed, of rambling about the streets disguised by night, with a band of disorderly companions, robbing and abusing all that came in their way, and carrying off all the pillage he could lay his hands on, which he sold the following day by auction in the palace. There was, in short, no species of brutality in which he did not delight. After the death of his mother, he plunged into a course of dissipated folly, that was highly derogatory to his rank; he exhibited his skill as a charioteer, and claimed public applause as an actor in the theatre. In the sixth year of his reign he instituted games, in imitation of those of Greece, which were at the same time gymnastical, musical, and equestrian. He named them Neronian games, and in his own person disputed the prizes of eloquence and poetry, in which he obtained an easy victory, none venturing to give the palm to his competitors. The terrible conflagration at Rome in the year 64, is by Suetonius and Dio charged upon him; but Tacitus expresses a doubt concerning its origin, and the probability is that the fire was accidental. Nero was at Antium when it happened, but returned in time to see the palace in flames. He now opened his gardens, and caused sheds to be erected for the multitudes who were deprived of a home, and took measures to prevent a scarcity, and supply the most pressing wants of the people. The emperor might have gained credit upon the whole by this disaster, had not the suspicion of his being the author still maintained ground in the minds of the people. The method which he took to divert it has perhaps excited greater detestation of his memory than all his other enormities. He caused the Christians to be accused as incendiaries, and, without trial or inquiry, apprehended all whom he could discover in the city, and put them to death in the most horrible manner. This savage conduct, for which there was not the slightest pretence, has branded him most justly with the title of the first persecutor of the Christian church. In the re-edification of Rome, great attention was paid to order and convenience in the streets and edifices; but none could bear comparison with that which Nero constructed for his own residence, and which he called the "Golden Palace." This building was not more remarkable for the immense quantity of gold and other precious materials employed in its decoration than for its magnitude. Nero, whose taste was entirely turned to the gigantic, and who enjoyed nothing but in proportion to its cost, said when it was finished, that he was now lodged like a man. His profusion of every sort rendered him always needy, and consequently rapacious: he plundered, without remorse, every body; and the temples themselves were not sacred when his wants required their wealth.

A long and bloody list of executions, in which the victims were the best and greatest men of Rome, distinguish the annals of his subsequent years. At length the enormities of this monster roused the indignation of the army and the people, and he was driven from Rome. After his flight, Galba was proclaimed emperor, and Nero declared a public enemy by the senate, and condemned to an ignominious end, such as was inflicted on the vilest malefactor, viz. to be dragged through the streets of Rome, and whipped to death; afterwards his body was to be thrown down from the Tarpeian rock. The execution of this sentence he prevented by a voluntary death. He pierced his throat with a poniard; but being too irresolute effectually to perform the deed, his hand was aided by his secretary. This was in the 68th year of the Christian era, when he had attained the age of 32, after a reign of almost 14 years. In him terminated the line of Augustus.

7. GALBA (SERVIUS SULPICIUS) was consul under Tiberius, A.D. 33. Caligula gave him the command of the legions in Upper Germany, and with these he restored the ancient military discipline, and repressed the inroads of the natives. Upon the death of that emperor, he was urged by his friends to assume the imperial authority;

but he chose rather to submit to the government of Claudius, who continued him in his command, and conferred upon him the pro-consulate of Africa. In this high office he conducted himself with great propriety, and his victories were gratified with a public triumph. He afterwards passed several years as a private citizen, till he was nominated by Nero, in 61, to the government of a province in Spain. In 68, he was declared emperor, and the death of Nero immediately followed. The virtues which had shone so bright in Galba when in a private station, in many instances totally disappeared when he ascended the throne; and he who showed himself the most impartial judge, forgot the duties of an emperor. He was assassinated in the 73rd year of his age, and in the seventh month of his reign. Galba was the last emperor who claimed descent from the ancient families of Rome.

8. OTHO (M. SALVIUS) descended from a consular family, and in the beginning of the reign of Nero, or about the year 55, he was distinguished as a young man of graceful person, but licentious manners, and even well fitted as a companion to the emperor. His intrigues with the soldiers caused the overthrow and murder of Galba, and himself to be elected by the prætorian bands to the throne: he in turn found a rival in Vitellius, who in the action with the army of Otho (who had himself retired from the main body of the troops with some of his guards), between Cremona and Bebriacum, gained a signal and decisive victory. Otho received the fatal news at Brixellum, whither he had retired, and his first thought was to destroy himself, as the only means of freeing himself from his cares, and his country from the dire calamity of a civil war. The soldiers flocked round him, beseeching him to live, and to confide in their fidelity and valour for retrieving his affairs. They embraced his knees, kissed his hand, and gave every demonstration of their adherence and attachment. A common soldier, seeing him immovable, drew his sword, and exclaiming, "From this, Cæsar, judge of our fidelity, for there is not a man among us who would not do as much to serve you," plunged it into his own body, and fell dead at his feet. "No more such brave men," cried Otho, "shall lose their lives on my account." He accordingly mounted

the tribunal, and made a most pathetic speech to his soldiers, in which he gave reasons for declining the contest. "I can never," said he, "so much advance the interests of my country by war and blood as by sacrificing myself for its peace. Others have purchased real fame by good government: let it be my glory to leave an empire, rather than, by my ambition, to weaken or destroy it." He expressed the greatest satisfaction and gratitude for the attachment he had met with, and then announced his final decision. He earnestly exhorted all those who adhered to him to submit in time to the conqueror, that they might deserve and obtain his clemency. He took measures to expedite their departure, and divided his jewels and money among his friends; then retiring to a private chamber, he wrote consolatory letters to his sister, and to a lady he designed to marry. Hearing a tumult among the soldiers, he went out and quieted them, and returning to his chamber, he drank a draught of cold water, tried the points of two daggers, and placed the sharpest under his pillow. He lay down in perfect tranquillity, and passed some hours in sleep. At day-break, Otho gave himself the mortal stroke, and expired in the arms of those who entered on hearing his groans. The soldiers assembled at the mournful news, and with bitter lamentations carried his body to the funeral pyre. Several slew themselves as a sacrifice to his manes, and many in the neighbouring quarters, when they heard of the event, fell by mutual wounds. Otho died at the age of thirty-seven, after a reign of three months. There is something in the conclusion of this prince's reign which almost atones for the methods which he adopted to acquire dominion. The faults of his life were in the general opinion obliterated by the glory of his death.

9. VITELLIUS (AULUS) was born A. D. 16, and resided in his youth at Caprea, the infamous abode of Tiberius. To Caligula he recommended himself by his skill as a charioteer; and by his passion for play to Claudius, who made him consul, A. D. 48. He likewise presided at the games in which Nero exposed himself as a musician. At this time Vitellius disgraced himself by his servility and meanness; but in the post of governor of Africa he obtained some credit. At length, however, he was reduced to indigence by his licentiousness, and was thus led to practise fraud, with regard to the offerings and ornaments

of the temples, by substituting base metals for silver and gold. On the accession of Galba to the empire, A.D. 68, Vitellius was appointed to the command of the legions in Lower Germany; Galba assigning as a reason for this preferment, that a man addicted to gluttony was not to be feared.

When Otho destroyed himself, Vitellius was proclaimed emperor without opposition, in April, A. D. 69. Stupid insensibility was his predominant foible, rather than a revengeful spirit; and this was the effect of his insatiable and shameful gluttony. His extravagance in indulging his appetite for costly dishes, covered with all the rarities he could procure, knew no bounds. He is said to have consecrated a silver dish, which, on account of its size, he called the buckler of Minerva, and to have filled it solely with the livers of a small delicate fish, the brains of peacocks and pheasants, the tongues of flamingoes, and the roes of lampreys. The expenses of his table, during eight months of his reign, have been estimated at five millions sterling.

Every evil which Rome had suffered under its worst emperors seemed to be its destiny in the reign of Vitellius. But a deliverance was preparing for the seemingly devoted city. The eastern army was approaching, and Vespasian was proclaimed emperor: the victorious army reached the city while in the midst of the festivities of the Saturnalia: it was a scene of slaughter and blood; and in the tumult the temple of Jupiter Capitolinus was consumed by fire. Vitellius took no part in the business, but withdrew to the house of his wife on Mount Aventine; from hence he was removed again to the palace, and was found in the porter's lodge, entreating in the most abject manner that his life might be spared. But his entreaties were ineffectual: with his hands tied behind him, and a cord about his neck, he was dragged like a common criminal, in the midst of insults of every kind, to the Gemonian stairs, and being despatched in a barbarous manner, his head was cut off, and stuck upon a spear, to be carried through the city, and his trunk was thrown into the Tiber. Thus he closed a short and ignominious reign, in the 55th year of his age, A. D. 69.

10. Vespasian (Titus Flavius Vespasianus) was born near Reati, in the country of the Sabines, A. D. 7.

In the year 38 he was ædile, and disgraced himself by his adulation of the tyrant Caligula.

When Italy submitted to his name, he was at Alexandria, and as the senate and people concurred in his elevation to the imperial throne, he left that city A. D. 70, and hastened to Rome, where he was eagerly expected. He was received with general congratulation and rejoicing; and his conduct confirmed the hopes that were entertained at the commencement of his reign. Whilst he restrained luxury by his example and authority, and administered justice and impartiality, he manifested, in his general conduct, the mildness and clemency of his disposition. The principal blemish of his character was his avarice: accordingly, he had recourse to various mean and oppressive expedients for raising money. Nevertheless, the wealth he obtained by sordid methods was distributed with munificence, in improving the capital and the country, and in providing for poor senators, for literary professors, and for the encouragement of the arts.

He expired in the arms of his attendants, in June, A. D. 79, in the seventieth year of his age, and the tenth of his reign, lamented by the Roman people, who, under his government, had enjoyed several years of peace. Titus, one of his sons, was the great support of his father's throne, and the other, Domitian, was the cause of much trouble and vexation to him.

11. TITUS (VESPASIANUS) was born A. D. 40. Upon the death of Vespasian, A. D. 79, Titus immediately succeeded him, and by his conduct towards his rival Domitian, and to those who adhered to his interest, he gained the affection of the people, and established a character which has caused him to be recorded under the glorious title of "The Delight of the Human Race." Although his reign was short, it was distinguished by a series of beneficent actions; not always, perhaps, equally liberal in the principle from which they originated. This course of beneficence was commenced by a confirmation of all the grants and donations made by his predecessors. And he thus established a precedent, which governed the conduct of his successors. Upon assuming the office of chief pontiff, he avowed it to be a solemn engagement not to shed the blood of a citizen, and to this resolution he adhered in a conspiracy against himself. In the case

of one of the two patricians implicated in this crime, he calmed the anxiety of his mother, by deputing a special messenger to assure her that her son's life was in no danger. Besides, he abrogated the law of high-treason, with respect to all convictions for words or writings against the person or dignity of the emperor.

It was one of his maxims, "that no one ought to go discontented from the person of his prince;" and on this he founded his practice of giving hopes to petitioners, when he thought it necessary to refuse their requests. If we connect this maxim with his well-known exclamation at the close of a day on which he had conferred no benefit, "My friends, I have lost a day!" we cannot forbear suspecting, that the benefits to which he referred were rather acts of private bounty to courtiers or importunate suitors than the performance of public duties. Many instances occur of his love of popularity, and of the excess in which he indulged it. The public calamities that happened during his reign gave occasion for the exercise and display of his bounty: such were the great eruption of Mount Vesuvius, which destroyed Herculaneum, Pompeii, and other towns, and the conflagration of Rome, which was followed by a fatal epidemic disorder. His general conduct entitled him to the affection of his subjects; nor does he seem to have deserved reproach for any act of injustice or oppression. Whilst he was on a journey to the country of the Sabines, he was seized with a fever, which terminated fatally on the 13th of September, A. D. 81, in the forty-first year of his age.

12. DOMITIAN (TITUS FLAVIUS DOMITIANUS) was the second son of Vespasian, and born at Rome, October 24th, A. D. 51. Immediately on the death of Titus, A. D. 81, Domitian, who was then thirty years of age, was proclaimed emperor; and having attained this eminence, his character soon began to be developed. He began his career by accepting all those titles of honour which other emperors had generally been accustomed to defer till they had done something that seemed to merit them. He did not scruple to declare in full senate, that the supreme power to which he had attained was merely a restitution on the part of his father and brother of his right, and which he had condescended to permit them to

enjoy; and he caused himself to be appointed consul for ten years to come: so that, adding these to the seven consulships which he had enjoyed under Vespasian and Titus, he prided himself on having been consul seventeen times, which was an honour never possessed by any Roman before or after him. Instead of twelve lictors, he had twenty-four; and after he had once triumphed, he always presided in the senate in his triumphal dress. On the various edifices which he caused to be built, instead of those that had been destroyed by fire, he had his own name inscribed, without the least mention of their first founders; and he filled the world, as Dion Cassius says, with his statues: nor would he suffer any to be erected to him in the Capitol which were not of gold, or at least silver, and of a certain height. In every street and corner of Rome he built triumphal arches, as monuments of his pretended victories. He caused himself to be proclaimed "Imperator," or victorious general, twenty-two times during the course of his reign, though he was almost always shamefully defeated. Not satisfied with the title of Lord and Master, which Augustus and Tiberius had rejected with a kind of horror, he added to it that of God; and this impious style was observed through his whole reign.

In his amphitheatrical shows he was both profuse and cruel. Having caused to be dug an immense lake near the Tiber, he exhibited a sea-fight, in which the ships were so numerous that they formed almost two complete fleets; and during this exhibition, when a heavy rain fell, he would not suffer any of the spectators to withdraw; so that many died in consequence of the cold which they took on this occasion.

In his own family, at length, his tyranny was felt; and a conspiracy was formed against him under his own roof, and among his officers and freedmen. As he was going to bathe before dinner, his chamberlain, Parthenius, introduced to him Stephanus, steward of Domitilla, his niece, and wife of Clemens, under pretence of having some important business to communicate. Stephanus having his arm in a sling, as if he had been hurt, concealed a dagger; and, after presenting a memorial to the emperor, and whilst he was reading it, he plunged the dagger into his body. Domitian had strength enough remaining to seize the assassin, and throw him upon the ground; and calling for his sword, which was placed under his pillow, the scabbard only remained. Whilst they were still struggling, the other conspirators entered, and with seven stabs despatched the tyrant. Some officers of his guard were alarmed, and entered too late to save his life, though they killed Stephanus. Domitian's death took place September 18, A. D. 96, when he was forty-four years, ten months, and twenty-six days old, and after he had reigned fifteen years and five days.

XII ENGLISH SPORTS and PASTIMES.

1. *Hunting*. The antiquity of this sport may be traced back to at least 2600 years before the Christian era. Sacred history describes the first warriors under the name of hunters: thus, Nimrod is represented as " a mighty hunter before the Lord." (Gen. x. 9.) He afterwards made soldiers of his companions, who had assisted him in hunting and destroying the savage beasts that had laid waste the country about Babylon, and employed them in extending and establishing his conquests.

In Britain, as early as the ninth century, and probably before that period, hunting constituted an essential part of the education of a gentleman. With Alfred the Great, and all the Saxon kings, this was the favourite sport, The Danes differed little from the Saxons in their amusements; the propensity to hunting was common to both; and when Canute obtained possession of the throne of England, he imposed several severe restrictions on the pursuit of game, which seem to have been unprecedented, and may be taken as a proof of his strong attachment to this pastime; for, in other respects, his edicts had the appearance of mildness and regard for the comforts of his people.

Edward the Confessor, whose disposition was better suited to the cloister than the throne, would join in no other secular amusements; but he took the greatest delight, says Malmesbury, " to follow a pack of swift hounds in pursuit of game, and to cheer them with his voice."

Under the despotic government of William the Norman, and his two sons, his successors, the privileges of hunting in the royal forests were confined to the king and his favourites; and to render these receptacles for the beasts of the chase more capacious, or to make new ones, the conqueror laid waste a country of above thirty miles in extent, driving out all the inhabitants, destroying their dwellings, not sparing even their churches; twenty-two, or, as some say, thirty-six of which he demolished, much as he affected a respect for religion.

In the reign of Edward II. this amusement was reduced to a perfect science, and regular rules were established for its practice. These rules were afterwards extended by the master of the game belonging to king Henry IV., and drawn up for the use of his son Henry, prince of Wales.

Edward III. was so fond of hunting, that even while he was engaged in a war with France, and resident there, he had with him sixty couple of stag hounds, and as many hare hounds.

"The bishops and abbots of the middle ages hunted with great state, having a large train of retainers and servants; and some of them are recorded for their skill in this fashionable pursuit. Walter, bishop of Rochester, who lived in the thirteenth century, was an excellent hunter, and so fond of the sport, that at the age of fourscore he made hunting his sole employment, to the total neglect of the duties of his office.. In the succeeding century, an abbot of Leicester surpassed all the sportsmen of the time in the art of hare hunting; and even when these dignitaries were travelling from place to place, upon affairs of business, they usually had both hounds and hawks in their train. Fitz-Stephen assures us, that Thomas-à-Becket being sent as ambassador from Henry II. to the court of France, assumed the state of a secular potentate, and took with him dogs and hawks of various sorts, such as were used by kings and princes."

Queen Elizabeth was "excellently disposed to hunting, and was every second day on horseback."

There was a peculiar kind of language invented by the sportsmen of the middle ages, which is very curious. When beasts went together in companies, there was said to be a pride of lions, a lepe of leopards, a herd of harts, of bucks, and of all sorts of deer; a bevy of roes, a sloth of bears, a singular of boars, a sownder of wild swine, a dryft of tame swine, a route of wolves, a harras of horses, a rag of colts, a stud of mares, a pace of asses, a baren of mules, a team of oxen, a drove of kine, a flock of sheep, a tribe of goats, a sculk of foxes, a cete of badgers, a richess of martins, a fesynes of ferrets, a huske or a down of hares, a nest of rabbits, a clowder of cats, and a kendel of young cats; a shrewdness of apes, and a labour of moles: and also of animals when they retired to rest; a hart was said to be harboured, a buck lodged, a roebuck bedded, a hare formed, a rabbit set, &c. Two greyhounds were called a brace; three, a leash; but two spaniels or harriers were called a couple. We have also a mute of hounds for a number, a kennel of raches, a litter of whelps, and a cowardice of curs.

2. *Hawking*, though the principal amusement of our ancestors, was either wholly unknown, or very little practised by the Greeks and Romans. Some have ascribed the invention to the emperor Frederic I., and others to Frederic II.; it seems, however, to have had a much earlier origin. "In our own country," says Mr. Pennant, "I cannot trace the certainty of falconry till the reign of king Ethelbert, the Saxon monarch, in the year 760; when he wrote to Germany for a brace of falcons which would fly at cranes, and bring them to the ground, as there were very few such in Kent. It seems highly probable that falconry had its rise in Scythia, and passed from thence to the northern parts of Europe. Tartary is even at present celebrated for its fine breed of falcons; and the sport is in such general esteem, that, according to Olearius, there was no hut but what had its eagle or falcon. The boundless plains of that country are as finely adapted to the diversion as the wooded or mountainous nature of most part of Europe is ill calculated for that rapid amusement.

Hawking was pursued with great ardour in England so late as the reign of James I., but gradually declined after that time; indeed, from the introduction of the invention of gunpowder, hawks began to be discarded, and the diversion of fowling was very much restricted to shooting. In hawking, as in hunting, the sportsmen had their peculiar terms: the following were applied to birds assembled in companies: a sege of herons and of bitterns; a herd of swans, of cranes, and of curlews; a dopping of sheldrakes, a spring of teels, a covert of cootes, a gaggle of geese, a badelynge of ducks, a sord or sute of mallards, a muster of peacocks, a nye of pheasants, a bevy of quails, a covey of partridges, a congregation of plovers, a flight of doves, a dule of turtles, a walk of snipes, a fall of woodcocks, a brood of hens, a building of rooks, a murmuration of starlings, an exaltation of larks, a flight of swallows, a host of sparrows, a watch of nightingales, and a charm of goldfinches.

3. *Coursing*. This sport is of great antiquity: it is first treated of by Arrian, who flourished A.D. 150. Coursing originated with the Gauls, the most luxurious and opulent of whom used to send out good hare-finders early in the morning, to those places where it was likely to find hares sitting; they returned to their employers with an account of the number found, who then mounted their horses, and took out their greyhounds to course them: not more than two greyhounds were to be ran at once, and these were not to be laid in too close to the hare; for although that animal is swift, yet when first started she is so terrified by the hallooing, and by the closeness and speed of the dogs, that in the confusion of fear the best sporting hares were frequently killed without showing any diversion.

In ancient times three several animals were coursed with greyhounds, viz. the *deer*, the *fox*, and the *hare*. The two former are not now practised; but the coursing of deer was formerly a recreation highly esteemed, and was divided into two sorts, called the *paddock*, and the *forest*, or *purlieu*.

The laws of coursing were established by the duke of Norfolk, in the reign of queen Elizabeth, and were agreed to by the nobility and gentry who then followed the sport; and they have always been held authentic.

4. *Cock-fighting*. This barbarous pastime, which claims the sanction of high antiquity, was practised at an early period by the Grecians, and afterwards by the Romans: with us, it may be traced back to the twelfth century. "Every year," says Fitz-Stephen, "on the morning of Shrove Tuesday, the school-boys of the city of London bring game-cocks to their masters, and in the fore part of the day, till dinner-time, they are permitted to amuse themselves with seeing them fight." The school was the cockpit, and the master the controller and director of the pastime, which was called Carnilevaria. From this time (Henry II.) the diversion, however absurd and barbarous,

has continued among us. By some it has been called "a royal diversion." It was much encouraged both by Henry VIII. and James I.; was forbidden by one of the acts of Oliver Cromwell, but renewed and encouraged by Charles II. Henry VIII. founded the celebrated national cock-pit at Westminster, where annual mains have been fought from that period to the present time.

"Cock-fighting," says the Rev. Mr. Pegge, "is an heathenish mode of diversion from the first; and at this day ought certainly to be confined to those barbarous nations, the Chinese, Persians, Malayans, and the still more savage Americans, whose irrational and sanguinary practices ought in no case to be objects of imitation to more civilised Europeans."

"*Throwing* at cocks was a very popular diversion among the younger parts of the community, and universally practised on Shrove Tuesday. If the poor bird had his legs broken, or was otherwise so lamed as not to be able to stand, the barbarous owners were wont to support it with sticks, in order to prolong the pleasure received from the reiteration of its torment. In some places it was a common practice to put the cock into an earthen vessel made for the purpose, and to place him in such a position that his head and tail might be exposed to view: the vessel with the bird in it was then suspended across the street, about twelve or fourteen feet from the ground, to be thrown at by such as chose to make trial of their skill: two-pence was paid for four throws, and he who broke the pot, and delivered the cock from his confinement, had him for a reward."

The cock was called *the bird* by many of the ancients; he was highly esteemed in some countries, and in others was even held sacred; insomuch, that one cannot forbear regretting that a creature so noble and so useful should be so cruelly treated. It affords, however, some satisfaction that the massacre of Shrove Tuesday is now very rapidly declining, if not entirely obsolete; and this circumstance encourages the hope that at no distant period the cock-pit may also fall into disuse: it is a reproach to the humanity of Englishmen, and to the benign religion which they profess.

5. *Horse-racing.* The first indication of a sport of this kind in England occurs in a description of London, written by Fitz-Stephen, who lived in the reign of Henry

II. Racing was originally practised here for the sake of exercise, or by way of emulation; and, generally speaking, the owners of the horses were the riders.

In the reign of James I. public races were established in many parts of the kingdom; they were called *bell courses*, because the prize was a silver bell. At the latter end of the reign of Charles I., races were held in Hyde-Park, and at Newmarket. After the restoration, this sport was revived and much encouraged by Charles II.; and when he resided at Windsor, he appointed races to be made in Datchet-Mead. At Newmarket, where he entered horses, and ran them in his own name, he built a house, part of which is now standing. The prize bells were converted into cups, or bowls, or some other pieces of plate, which were usually valued at one hundred guineas each; and upon these trophies of victory the exploits and pedigree of the successful horses were engraved.

Racing was also one of the exercises among the ancient Grecian games. There were two kinds of horse-races at Olympia, namely, the *chariot-race*, introduced in the 25th Olympiad, and the race of *riding horses*, which was not admitted till the 33d.

6. *Archery*. Among the nations of antiquity, the bow was a principal implement of war. Its use may be traced to the very earliest time, and followed in the history of almost every country.

Our ancestors used the bow for a double purpose: in time of war, it was a dreadful instrument of slaughter; and in peace, an object of amusement. Among the Saxons and Danes it seems to have been used only for the purposes of food and pastime; and we are perhaps indebted to the Norman conquest for its introduction as a military weapon. The Normans, at the battle of Hastings, used the *arbalest*, or cross-bow; but Harold had no archers. The time when shooting with the *long-bow* began is not known. Our chroniclers do not mention archery as applied to either one bow or the other till the death of king Richard I., in 1199, who was killed at Chaluz by an arrow, said to have proceeded from a cross-bow. From this time till that of Edward II. our notices of archery are scanty; the king's *balistarius*, or cross-bow-man, is often mentioned, and it is in this reign that we meet with *sagittarius*, a term which, perhaps, has particular relation to the shooters with the long-bow. Under Edward III., the glory of the English long-bow was at its zenith; and that monarch appears to have been very anxious that its lustre should remain untarnished. In 1342, a precept was issued to the sheriffs of most of the counties in England for providing 500 white bows, and as many bundles of arrows, for the intended war against France; and the king afterwards ordered a letter of complaint to be directed to the sheriffs of London, declaring that the skill in shooting with arrows was almost totally laid aside for the pursuit of various useless and unlawful games: and commanding them not only to prevent such idle practices in future, but to see that the leisure time upon holidays was spent in the recreation of archery. The battle of Cressy, in 1346, was attended by a circumstance which seems to have a particular reference to the use of the long-bow among the English. Previously to the battle, a shower of rain so slackened the strings of the Genoese cross-bows, that they became almost unserviceable; while the English were still capable of annoying their enemies with success. Both this victory and that of Poictiers, ten years afterwards, were chiefly ascribed by the English to their archers. In 1403, at the battle of Shrewsbury, where Hotspur was slain, the archers on both sides did terrible execution; and the victory of Agincourt, in 1417, was entirely owing to their skill. Under Edward IV. an ordinance was made that every Englishman and Irishman, dwelling in England, should have a bow of his own height; to be made of yew, wych, hazel, ash, or auberne, or any other reasonable tree, according to their power. By Henry VII., and his son Henry VIII., the use of the cross-bow was entirely forbidden; and a penalty of ten pounds was to be inflicted on every man in whose house one might be found. The latter monarch compelled every father to provide a bow and two arrows for his son at seven years old. Edward VI., Elizabeth, and James, all encouraged archery. John Lyon, who founded Harrow School, in 1590, two years before his death, drew up rules for its direction, whereby the amusements of the scholars were confined to "driving a top, tossing a hand-ball, running, and shooting." The last-mentioned diversion is in a manner insisted on by the founder, who requires all parents to furnish their children with "bow-strings, shafts, and bresters, to exercise shooting." A silver arrow used some years ago to be shot for by the young gentlemen of Harrow School.

7. *Slinging* of stones. The art of slinging, or casting stones with a sling, is very ancient. Strutt gives the following account of its early history. The tribe of Benjamin, among the Israelites, is celebrated in holy writ for the excellency of its slingers. In the time of the judges, there were seven hundred Benjamites who all of them used their left hands; and, in the figurative language of the Scripture, it is said, they "could sling stones at an hair breadth, and not miss;" that is, with exceedingly great precision. Again we are told, that when David fled to Ziklag, he was joined by a party of valiant men of the tribe of Benjamin, who could use both the right and the left hand in slinging of stones and shooting arrows out of a bow. David himself was also an excellent marksman, as the destruction of Goliath, by means of his sling, sufficiently testifies. It was, perhaps, an instrument much used by the shepherds in ancient times, to protect their flocks from the attacks of ferocious animals; if so, we shall not wonder that David, who kept his father's sheep, was so expert in the management of this weapon.

The Saxons were skilful in the management of the sling, and it formed one of the weapons of the Anglo-Norman soldiery. Slinging was an amusement of the Londoners in the 12th century, and continued in high estimation till the commencement of the 17th century, when the higher classes of the people appear to have lost all relish for this pastime.

8. *Wrestling*, which in the present day is confined to the lower classes of the people, was an art highly esteemed by the ancients, and made a very considerable figure in the Olympic Games. In the ages of chivalry, to wrestle well was counted one of the accomplishments which a hero ought to possess. The inhabitants of Cornwall and Devonshire have, we are well assured, from time immemorial, been celebrated for their expertness in this pastime, and are allowed to be the best wrestlers in the kingdom. In times past, the citizens of London, annually on St. James's day, were accustomed to make a public trial of their skill in wrestling.

9. *Boat-rowing*. "This art," says Strutt, "was well

understood by the primitive inhabitants of Britain, who frequently committed themselves to the mercy of the sea, in open boats constructed with wicker-work, and covered with leather. The Saxons were also expert in the management of the oar, and thought it by no means derogatory for a nobleman of the highest rank to row or steer a boat with dexterity and judgment. The reader may possibly call to his recollection the popular story related by our historians concerning Edgar, surnamed the Peaceable, who, they tell us, was conveyed in great state along the river Dee, from his palace in the city of West Chester, to the church of St. John, and back again: the oars were managed by eight kings, and himself, the ninth, sat at the stern of the barge, and held the helm. This frolic, for I cannot consider it in any other light, appears to be well attested, and is the earliest record of a pastime of the kind."

The boat quintain, and tilting at each other upon the water, which was introduced by the Normans as amusements for the summer season, could not be performed without the assistance of oars. This exercise is first mentioned as being in practice in England by Fitz-Stephen. "The young Londoners, during the Easter holidays, fixed a pole or mast in the middle of the Thames, with a shield strongly attached to it; and a boat being previously placed at a distance, is driven swiftly towards it by the force of oars and the violence of the tide, having a young man standing in the prow, who holds a lance in his hand, with which he is to strike the shield; and if he be dexterous enough to break the lance against it, and retain his place, his most sanguine wishes are satisfied. On the contrary, if the lance be not broken, he is sure to be thrown into the water, and the vessel goes away without him; but at the same time, two other boats are stationed near the shield, and furnished with many young persons, who are in readiness to preserve the champion from danger."

When tilting at the quintain, and justing one against another in boats upon the water, were discontinued in this country, rowing-matches were substituted, and are become very popular. We may see them frequently exhibited on the Thames during the summer season.

10. "*Skating*," says Strutt, "is by no means a recent pastime, and probably the invention proceeded rather from necessity than a desire of amusement.

"It is the boast of a northern chieftain, that he could traverse the snow upon skates of wood. I cannot, by any means, ascertain at what time skating made its first appearance in England; but we find some traces of such an exercise in the thirteenth century; at which period, according to Fitz-Stephen, it was customary in the winter, when the ice would bear them, for the young citizens of London to fasten the leg-bones of animals to the soles of their feet by tying them round their ancles, and then taking a pole shod with iron into their hands, they pushed themselves forward by striking it against the ice, and moved with a celerity equal, says the author, to a bird flying through the air, or an arrow from a cross-bow;—but some allowance, I presume, must be made for the poetical figure. He then adds, 'at times two of them, thus furnished, agree to start opposite one to another, at a great distance; they meet, elevate their poles, attack, and strike each other, when one or both of them fall, and not without some bodily hurt; and even after their fall, are carried a great distance from each other by the rapidity of the motion, and whatever part of the head comes upon the ice, it is sure to be laid bare.'"

The wooden skates, shod with iron or steel, which are bound about the feet and ancles like the talares of the Greeks and Romans, were most probably brought into England from the Low Countries, where they are said to have originated, and where it is well known they are almost universally used by persons of both sexes when the season permits.

11. *Bowling* was another pastime much practised in England, either upon open greens, or in bowling-alleys; supposed to be an invention of the middle ages, Strutt not being able to trace it farther back than the 13th century. Bowling-alleys having become receptacles of idle and dissolute people, and particularly those established in London, they were universally decried in the sixteenth century, and afterwards totally abolished.

12. Games with the *Ball.* "The most ancient amusement of this kind," says Strutt, "is distinguished by the name of *hand-ball;* and is, if Homer may be accredited, coeval at least with the destruction of Troy.

The game of *hand-ball* is called by the French palm-play; because originally the exercise consisted in receiving the ball, and driving it back again with the palm of the hand. At first, they played with the naked hand,* then with a glove, which, in some instances, was lined; afterwards they bound cords and tendons round their hands to make the ball rebound more forcibly: hence the racket derived its origin. During the reign of Charles V. palm-play, which may properly be denominated hand-tennis, was very fashionable in France, being played by the nobility for large sums of money. With many of the kings of England tennis was esteemed "an exercise becoming a prince." Henry VII., Henry VIII., James I., and Charles II. were all tennis-players. The other principal games played with a ball, are *goff, hurling, foot-ball, cricket, trap-ball,* &c.

---

* In the game of *Fives* (precisely the same amusement), the naked hand is still employed.

EXERCISES.

It is scarcely necessary to state, that the most effectual manner of using this volume as a book of instruction, is to require explanations in writing on the various subjects which it contains. With this view the following list of questions has been prepared: the intelligent tutor will, of course, extend and diversify them; and exercise the pupils verbally in such sections as they may have previously studied.

At what period did Shakspeare live?
What public office did Milton hold, and when did he publish his "Paradise Lost"?
What is the title of Sir Isaac Newton's great work, and of what does it treat?
What were the laws of the Twelve Tables?
5. Name the quadrupeds which are covered with shells or scales.
What are Fossils?
Give an account of the origin and objects of Greenwich and Chelsea Hospitals, and of the architects employed in building them.
Explain the cause and effects of the tides.
Name the simple gases, and explain what is meant by compound gases.
10. Describe the origin of written characters.
What is the Talmud, and what does it contain?
What is Typographia?
When was printing introduced into England?
What does the Domesday book contain?
15. Explain the two sorts of Eclipses.
What were the Troubadours, and when did they flourish?
When and by whom were silk stockings first worn?
How are volatile oils obtained?
In whose reign was the first milled money struck in England?
20. When was the art of weaving tapestry first brought to England?
When was punctuation first introduced into Grammar?
Who were the two men called the sword and buckler of Rome?
Who was the first Roman to whom a naval triumph was decreed?
At what port in England did Charles II. embark after the battle of Worcester.
25. What are the divisions of Geography?
By whose order was the first Map made?
Name the two great captivities of the Jews.
Name the most distinguished Astronomers of the 16th, 17th, and 18th centuries.

What was Kepler's observation on Astrology?
30. What was the origin of Seals?
What is meant by the term Solstice?
When was the use of plate armour superseded?
Name and describe the two extremities of the Holy Land?
What was the cause of the first Punic war, and when was it concluded?
35. Who was Hannibal, and what were his exploits in the second Punic war?
What were the conditions of the peace terminating the second Punic war?
How did the third Punic war commence—what was the conduct of the Carthaginians; and how was this war terminated?
What is meant by the term Indiction?
What is meant by the Epiphany?
40. Name the three principal alkalies, and whence they are procured.
Give an account of Gunpowder.
Give some account of the Roman Gladiators.
Name the children of a King of England who reigned successively, and the most important acts of their reigns.
What ages are denominated the Learned Ages?
45. What is meant by an Olympiad?
When did the first eruption of Mount Vesuvius take place; and did any remarkable circumstances attend that eruption?
Which are the Ruminating animals?
How are the Metals classed?
What were the Roman Legions?
50. Name the orders of Reptiles.
To whom is the invention of the Trumpet ascribed?
Which of the Roman emperors refused his wife a suit of silk on account of its expense?
Who were the inventors of Geometry?
Name the orders of Architecture and the first fabric that was built according to any of those orders.
55. Name the Roman emperors distinguished by the encouragement they gave to architecture, and mention the principal buildings erected in their times.
Who was Appollodorus and which were his principal works?
What were the Gymnastic exercises?
Describe the Doctrines of Mineralogy.
Name the two greatest English Architects.
60. Through what people did the ten Arabic figures now in use come into Europe?
Who founded the order of Jesuits?
Give some account of the Druids.
Which are the regular or Platonic bodies?
When was the battle of Hastings fought?
65. What is meant by the proverbial expression of "the passage of the Rubicon?"
How many classes of Birds are there?
What are the primitive forms of Crystals?
Name the Mechanical powers?

What are the various colours used in mourning?
70. Name the six wives of Henry VIII.
What is Asbestine?
What were the earliest inventions for measuring Time?
What are the constituent parts of a Flower?
What is meant by the modifications of Clouds?
75. What are the Prismatic colours?
Give an account of the cities of Babylon and Nineveh.
Which is the highest Mountain on the face of the earth?
What is the earliest date to which Carriages may be traced?
Give an account of the earliest introduction of Glass into England.
80. How many branches of Chemistry are there?
Describe the meteorological Instruments.
What are the colours of Plants.
What is meant by additions of honour in Heraldry?
When were the first Tournaments held in England?
85. Who was the venerable Bede, and at what time did he live?
Give an account of the death of Thomas à Becket.
At what time did Friar Bacon live?
Who was the earliest Reformer of religion from popery?
Describe the different sorts of Earth.
90. What Colour was held in the highest estimation by the Ancients?
Who was the first persecutor of the Christians?
Name the primary planets, and distinguish the superior from the inferior.
What is meant by arms of Alliance in heraldry?
When did the first dissolution of religious houses take place?
95. Give an account of the religious houses dissolved by Henry VIII.
Who were Tesmond and Garnet?
What is Caloric?
What is meant by the term Acid?
Name some of the principal acids.
100. What are called Simple Substances in chemistry?
Give an account of the death of Bishop Latimer.
What was Augustus's boast with regard to the city of Rome?
What was the ancient name of Africa?
Describe the different kinds of beds in use among the ancient Romans.
105. Which of the Evangelists was characterised as the disciple whom Jesus loved?
What inscription was on the door of Plato's academy?
Name the birth-place of Archimedes.
How many times has England been conquered, and by what nations?
Name the five senses.
110. What is Pyroligneous acid?
What are the distinguishing properties of the Magnet?
What is an Epocha?
What are Zoophytes?
Who first adjusted the measure of an Ell, and by what standard?

115. What are the prerogatives of a king?
Who was the first Christian king in this island?
Where was Hotspur slain?
In what reign was the hereditary use of arms established in England?
What are the component parts of Atmospheric air?
120. What are the component parts of water?
Who were the Horatii?
What was the cause of the dispute between the Guelphs and the Gibellins?
What were the German Enthusiasts?
For what was the ancient city of Babylon most famed?
125. What did the Hebrews understand by the "Isles of the Gentiles?"
What is meant by the Servile War?
At what period is glass first mentioned in Roman history, and what happened to the artist at Rome, who made glass flexible?
Who was Dædalus, and what were his principal works?
Who were the first Navigators?
130. When was the mariner's Compass invented?
What was the origin of the title of Cæsar?
When was the first Crusade undertaken, and what was the object of the Crusaders?
Name the inventors of the steam engine.
Give the derivations of the names of the months.
135. Who was the first improver of the ancient Clepsydra, and in what manner did he effect the improvement?
Where was the first Clock fixed, and at what period?
At what rate does Sound travel?
By whom were the Cartoons painted?
How is dew formed?
140. When was the first charter for digging coals granted?
Which of the apostles was chosen in the room of Judas Iscariot?
Name the great painters who were cotemporary with Raphael.
What event rendered the reign of Augustus illustrious?
What were the followers of Wicliff called?
145. What number of persons were committed to the flames in the reign of Queen Mary?
When was the first English newspaper printed?
By whom were tithes first enjoined?
Of what did the defensive armour of the Israelites consist?
In what language is the Koran written?
150. What were the Sybils?

THE END.

London:
Printed by A. & R. Spottiswoode,
New-Street-Square.